



TOLL BRIDGE PROGRAM OVERSIGHT COMMITTEE

MEETING MATERIALS

May 1, 2007

CALTRANS

BAY AREA TOLL AUTHORITY

CALIFORNIA TRANSPORTATION COMMISSION





Letter of Transmittal

TO: Toll Bridge Program Oversight Committee
(TBPOC)

DATE: April 25, 2006

FR: Program Management Team (PMT)

RE: TBPOC Meeting Materials Packet – May 1, 2007

Attached is the TBPOC Meeting Materials Packet for the May 1st meeting. The packet includes memoranda and reports that will be presented at the meeting. A Table of Contents is provided following the Agenda to help locate specific topics. Items that are to be included after the mail-out will be printed on blue paper.

TBPOC MEETING
May 1, 2007, 1:00 PM - 3:00 PM
Caltrans Headquarters, Director's Conference Room
1120 N Street, Sacramento, CA

Topic	Presenter	Time	Desired Outcome
1. CHAIR'S REPORT	W. Kempton, CT	5 min	Information
2. CONSENT CALENDAR a. April 6, 2007 Meeting Minutes*	A. Fremier, BATA	1 min	Approval
3. PROGRESS REPORT a. Draft April 2007 Monthly Progress Report*** b. Draft May 2007 Monthly Progress Report* c. Draft 1 st Quarter Report Ending March 31, 2007*** 1) Transmittal Letters*	A. Fremier, BATA A. Fremier, BATA T. Anziano, CT A. Fremier, BATA	1 min 1 min 1 min 1 min	Information Information Information Approval
4. PROGRAM ISSUES a. Richmond-San Rafael Bridge Seismic Retrofit Project – Authority to Negotiate with State of California Department of Fish and Game* b. FY 2007-08 Capital Outlay Support Allocation Request*	T. Anziano, CT T. Anziano, CT	10 min 10 min	Approval Information
5. SAN FRANCISCO-OAKLAND BAY BRIDGE UPDATES a. Yerba Buena Island 1) Labor Day Weekend Closure for Detour West Tie In Work/YBI Viaduct Replacement* 2) Contract Change Orders* a) Design Enhancements b) West Tie-In Site Preparation Work b. Self-Anchored Suspension Superstructure 1) Overseas Site Visit*	 T. Anziano, CT T. Anziano, CT S. Maller, CTC	 20 min 10 min 10 min	 Approval Approval Information
6. NEW BENICIA-MARTINEZ BRIDGE a. Schedule Revision*	A. Fremier, BATA	10 min	Approval
7. Other Business a. TBPOC Face-to-Face Meeting	W. Kempton, CT		n/a
Next Meeting: Tuesday, June 12, 2007, 10:00 a.m. – 12:00 p.m., Bay Area Nimitz House, 1 Whiting Way, Yerba Buena Island			

* Attachments

** Final Documents still in process; to be provided as soon as available.

*** Stand alone document included in the binder.

TBPOC MEETING May 1, 2007

INDEX TAB	AGENDA ITEM	DESCRIPTION
1	1	CHAIR'S REPORT (No attachments)
2	2	CONSENT CALENDAR a. April 6, 2007 Meeting Minutes*
3	3	PROGRESS REPORT a. Draft April 2007 Monthly Progress Reports*** b. Draft May 2007 Draft Monthly Progress Report* c. Draft 1 st Quarter Report Ending March 31, 2007*** 1) Transmittal Letters*
4	4	PROGRAM ISSUES a. Richmond-San Rafael Bridge Seismic Retrofit Project – Authority to Negotiate with State of California Department of Fish and Game* b. FY 2007-08 Capital Outlay Support Allocation Request*
5	5	SAN FRANCISCO-OAKLAND BAY BRIDGE UPDATES
		a. Yerba Buena Island 1) Labor Day Closure for YBI Viaduct Replacement* 2) Contract Change Orders* a) Design Enhancements b) West Tie-In Site Preparation Work b. Self-Anchored Suspension Superstructure 1) Overseas Site Visit*
6	6	NEW BENICIA-MARTINEZ BRIDGE a. Schedule Revision*
7	7	OTHER BUSINESS (No attachments) a. TBPOC Face-to-Face Meeting

* Attachments

** Final Documents still in process; to be provided at the meeting

*** Stand alone document included in the binder

Item 1: Chair's Report

No Attachments

Memorandum

TO: Toll Bridge Program Oversight Committee (TBPOC) **DATE:** April 25, 2007

FR: Andrew Fremier, BATA Deputy Executive Director

RE: Agenda No. - 2a
Consent Calendar
Item- April 6, 2007 Meeting Minutes

Cost:

N/A

Schedule Impacts:

N/A

Recommendation:

Approval

Discussion:

The Program Management Team has reviewed and requests approval of the TBPOC April 6, 2007 Meeting Minutes.

Attachment:

April 6, 2007 Meeting Minutes



TOLL BRIDGE PROGRAM OVERSIGHT COMMITTEE

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

MEETING MINUTES

April 6, 2007, 10:00 AM – 12:00 PM

Training Room, New Benicia-Martinez Bridge Administration Building
70 Mococo Road, Martinez, CA

Attendees: TBPOC Members: Will Kempton, Steve Heminger, John Barna (via phone);
PMT Members: Tony Anziano, Andy Fremier, Stephen Maller;
Participants: Valerie Campbell, Michele DiFrancia, Kha Hoang, Beatriz Lacson,
Richard Land, Peter Lee, Brian Maroney, Rod McMillan, Bart Ney, Dina Noel,
Randy Rentschler, Judis Santos, Bijan Sartipi, Jon Tapping, Wendy Villenave,
Cathy Zmuda

Convened: 10:05 AM

Items	Action
<p>1. CHAIR'S REPORT</p> <p>The Chair noted the following:</p> <ul style="list-style-type: none">• The Alameda Superior Court has overturned the court action on the prevailing wage of tugboat operators which could translate to a \$20M payment. The Department aims to pursue an appeal of this action.• The TBPOC is to be kept apprised of out-of-state-travel, housing and operations in China.<ul style="list-style-type: none">○ The Committee requested that the PMT provide regular updates.○ The PMT to meet with the Chair to identify ways to minimize expenses for China travel.○ There is an opportunity to learn from the experiences of other U.S. agencies that are working or have worked in or with China, such as the Ports of Oakland and Los Angeles.• The Treasure Island ramps issue, while not a TBPOC business, has	<ul style="list-style-type: none">• PMT to provide regular updates of China operations.• PMT to meet with Chair to identify ways to minimize expenses for China travel.

(continued)

Items	Action
<p>ancillary implications on the East Span project. The ramp design impacts the YBI viaduct. The Department has relayed to the City and County of San Francisco that accommodations might be made, but not to the detriment of project cost and schedule.</p> <ul style="list-style-type: none">• Next week has been designated Transportation Week. The Governor announced that the state has exceeded the \$10B construction mark, the highest milestone ever achieved in the largest transportation program in the country (pre-bonds).	
<p>2. CONSENT CALENDAR BATA presented the following items for approval:</p> <ol style="list-style-type: none">a. February 15, 2007 Meeting Minutesb. March 5, 2007 Conference Call Minutesc. 2007 TBPOC Meeting Calendar	<ul style="list-style-type: none">• The TBPOC APPROVED the minutes for the February 15, 2007 meeting and the March 5, 2007 conference call, and the 2007 TBPOC Meeting Calendar.
<p>3. MONTHLY PROGRESS REPORT a. BATA presented the draft March 2007 Monthly Progress Report for information.</p> <ul style="list-style-type: none">• PMT approval through delegated TBPOC authority is anticipated after appropriate reviews and final comments are incorporated.	<ul style="list-style-type: none">• For the record, the TBPOC APPROVED the February 2007 Monthly Progress Report through their respective PMT members on March 6, 2007.
<p>4. PROGRAM ISSUES a. 2007 East Span Strategic Plan</p> <ul style="list-style-type: none">• The PMT provided an overview of the Strategic Plan which included a mission statement, goals, objectives and action plans. The Plan was revised to focus on three key goals: Goal 1: Accelerate schedule to seismic safety earlier than the current schedule of September 2013;	<ul style="list-style-type: none">• The TBPOC APPROVED the East Span Strategic Plan with the following condition:<ul style="list-style-type: none">○ Re-prioritize the order of Goals 2 and 3, i.e., make fiscal responsibility as Goal 2 and positive relationships as Goal 3.

(continued)

Items	Action
<p>Goal 2: Maintain positive relationships, communications, and outreach with the public and stakeholders to ensure smooth implementation; and Goal 3: Maintain fiscal responsibility while supporting schedule acceleration and delivery of the program.</p> <ul style="list-style-type: none">• Comments/discussion included:<ul style="list-style-type: none">○ The plan is a living document and will be updated on an annual basis. The PMT plans to provide monthly/quarterly progress reports to enable the TBPOC to track performance in implementing the three key goals.○ Note that the baseline schedule is one quantitative performance measure. It is important to combine quantitative measurement with qualitative evaluation, such as experience, knowledge, and spending time communicating and listening to the Contractor.○ The project is on schedule and consistent with the current approved schedule to open the East Span in 2013.○ ABF is aware of the TBPOC expectation to accelerate the Current Schedule and to implement the Opportunity Schedule. To this end, tremendous effort is being exerted on streamlining processes, pushing to find better ways to work, effecting quick problem turnarounds, accelerating the China schedule, etc.○ Focus on acceleration opportunities with the fabrication in China. Seize an	<ul style="list-style-type: none">• The PMT to inform the TBPOC on what is going on in implementing the Strategic Plan, be transparent in reporting, convey what ABF communicates, and provide the costs and tradeoffs.<ul style="list-style-type: none">○ PMT to provide monthly/quarterly updates to track performance in implementing the three strategic goals.

(continued)

Items	Action
<ul style="list-style-type: none">o opportunity where there is one.o It is important to acknowledge a problem where it exists, to fix it and report it.o When do we convey to the public our acceleration efforts? Possibly at the end of this calendar year. <p>b. Pre-Existing Program Obligations</p> <ul style="list-style-type: none">• The Department gave a brief update on the extended use of Pier 7.o Options being considered on extending the use include: (1) reverting back to the Department's original deed which the City of Oakland will likely challenge, or (2) negotiating with the City of Oakland an extension of a certain number of years for a specified amount of dollars.o Define what else the Program needs from the City of Oakland (e.g., Gateway Park), and identify what the Program can offer (e.g., small business opportunities) to steer negotiations. <p>c. Update on Cameras Linked to Web-Site</p> <ul style="list-style-type: none">• The Department reported that the CHP has recommended that the cameras not be turned on in real time due to concerns, not with construction details, but those related to security over patterns of behavior that the cameras might reveal.	<ul style="list-style-type: none">• The Department to present further details at the next TBPOC meeting (May 1st).• The Chairman to discuss respective goals, objectives and concerns with CHP Commissioner Mike Brown.• PMT to develop options with pros and cons; address how we go about achieving our goal of transparency while at the same time addressing security objectives.
<p>5. SAN FRANCISCO-OAKLAND BAY BRIDGE UPDATES</p> <p>a. Yerba Buena Island</p> <ul style="list-style-type: none">1) Labor Day Outreach Action Plan for YBI Viaduct Replacement• The PIO presented the plan for	<ul style="list-style-type: none">• The TBPOC APPROVED going forward, beginning Monday, April 9, with the message that further analysis is

(continued)

Items	Action
<p>TBPOC approval. A computer simulation preview of what is expected to happen during the Labor Day Weekend closure of the bridge was provided.</p> <ul style="list-style-type: none"> • Comments/discussion included: <ul style="list-style-type: none"> ○ State upfront why the closure is happening. Communicate to the public that the replacement of the viaduct will advance seismic safety for this portion of the East Span in 2007. ○ Connect with the success of the West Approach closure but also differentiate in that once started, the work must be completed before traffic can be allowed back on the bridge. ○ The contractor CCM has indicated they can do the work in 3 days with 5 hours float. ○ Should there be a need for a 4th day, explore using Friday, instead of Tuesday which is a higher productivity day (when people will be going back to work and children will be returning to school). <p>b. Self-Anchored Suspension Superstructure</p> <p>1) China Organization Update</p> <ul style="list-style-type: none"> • The Chairman of the Board and Chief Financial Officer of ZPMC are visiting the Bay Area on Sunday, April 29. ABF will be hosting a dinner in their honor with members of the TBPOC, PMT, and invited guests (BATA and CTC to determine the availability of their respective chairs for this occasion). A site visit of the Bay Bridge has been proposed. The visitors are traveling with a translator. ABF and the Department will provide their own translators. 	<p>being done to determine if full closure of the San Francisco Bay Bridge over the Labor Day Weekend 2007 will take 3 or 4 days, and that the public will be informed as events unfold.</p> <ul style="list-style-type: none"> • The PIO, starting with the April 9 outreach meetings, to solicit feedback from elected officials, chambers of commerce and businesses, and gauge their reaction to a possible 4th day of closure. • The TBPOC to decide at the May 1st meeting on which day to close should a 4th day of closure be required.

(continued)

Items	Action
<ul style="list-style-type: none">• The Department gave a brief update: a draft staffing plan has been developed; basic requirements and major issues have been identified and are being addressed. <p>2) Overseas Fabrication Site Visit</p> <ul style="list-style-type: none">• BATA reported that the trip to China to inspect the fabrication facilities in Changxing Island and Nantong, and to review the draft fabrication procedures at the ZPMC offices in Shanghai, was impressive.• While ZPMC's primary business is container cranes, they now have plans of becoming a world leading steel bridge fabricator. The company has an unprecedented resource capability.• Communication is crucial and will be a long-term challenge due to the translation and cultural differences. <p>c. Oakland Touchdown</p> <p>1) Addendum for Oakland Touchdown Contract #1</p> <ul style="list-style-type: none">• The Department requested TBPOC approval – in concept, with final approval delegated to the PMT - to issue Addendum No. 3, not 2 as printed, which includes, among others, the following two most significant items.<ul style="list-style-type: none">○ Item 3 creates a specification that will provide for extended vehicular access to the Skyway after completion of the Skyway contract;○ Item 6 is a modification to the Owner-Controlled Insurance Program (OCIP) specification in the contract as advertised - to reflect the concerns of a number	<ul style="list-style-type: none">• The TBPOC APPROVED Addendum No. 3 in concept, with final approval delegated to the PMT.

(continued)

Items	Action
of potential prime contractors.	
<p>6. NEW BENICIA-MARTINEZ BRIDGE</p> <p>a. Project Update</p> <ol style="list-style-type: none">1) Soffit Concrete Delamination<ul style="list-style-type: none">• The Department requested TBPOC approval for CCO's (#166, 168, 169, 172, and 173) for soffit repairs for delaminations at three locations under the bridge, for an estimated cost of approximately \$5.8M to be funded from the existing new bridge contingency, with no impact to the overall project contingency.2) Program Budget (no discussion)3) Rehabilitation of Existing Bridge Deck (no discussion)<ul style="list-style-type: none">• Coordinate delivery of "A" job to ensure project starts work as soon as practicable after the new bridge opening.4) Bridge Opening (media, celebration)<ul style="list-style-type: none">• The consensus was that the bridge be opened at the earliest possible date, preferably before the Labor Day weekend, with Opening Day to be discussed in greater detail at a future TBPOC meeting.5) Open Road Tolling (no discussion)	<ul style="list-style-type: none">• The TBPOC (with CTC Executive Director John Barna by proxy) APPROVED the following:<ul style="list-style-type: none">○ CCO's for repairs of delaminations on the new bridge;○ Use of project contingency for deck rehabilitation of existing bridge;○ New bridge opening schedule and ceremony concept.
<p>7. Other Business</p> <ul style="list-style-type: none">• The walking tour of the New Benicia-Martinez Bridge toll plaza was cancelled.• It was suggested that the June 12th meeting of the TBPOC be held at Yerba Buena Island, either at the Nimitz House or the Coast Guard facilities.	<ul style="list-style-type: none">• Clerk of the TBPOC to make the appropriate arrangements for a meeting venue at Yerba Buena Island.

(continued)

Adjourned: 12:41 PM

MEETING MINUTES

April 6, 2007, 10:00 AM – 12:00 PM

Training Room, New Benicia-Martinez Bridge Administration Building
70 Mococo Road, Martinez, CA

APPROVED BY:

WILL KEMPTON, Director
California Department of Transportation

Date

JOHN F. BARNA, Jr., Executive Director
California Transportation Commission

Date

STEVE HEMINGER, Executive Director
Bay Area Toll Authority

Date

Memorandum

TO: Toll Bridge Program Oversight Committee (TBPOC) **DATE:** April 25, 2007

FR: Andrew Fremier, BATA Deputy Executive Director

RE: Agenda No. - 3a, 3b
Progress Report
Item- Draft April 2007 Monthly Progress Report
Draft May 2007 Monthly Progress Report

Cost:

N/A

Schedule Impacts:

N/A

Recommendation:

For Information Only

Discussion:

For the record, the PMT approved the March 2007 Monthly Progress Report through delegated TBPOC authority on April 9, 2007.

TBPOC approval of the April 2007 Monthly Progress Report through their PMT representatives is anticipated as soon as updated expenditure data through April 30, 2007 and final comments are incorporated. Included in this package is a draft copy of the report.

The Draft May 2007 Monthly Progress Report is going through the initial review process and is expected to be approved through delegated TBPOC authority the first week of June 2007.

Attachment:

Draft April 2007 Monthly Progress Report



Toll Bridge Seismic Retrofit and Regional Measure 1 Programs

Monthly Progress Report April 2007

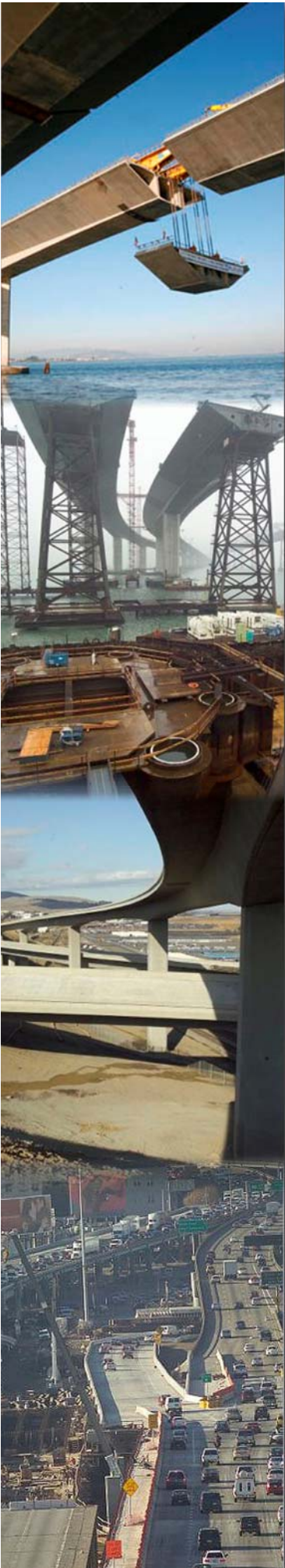
DRAFT



**TOLL BRIDGE PROGRAM
OVERSIGHT COMMITTEE**

CALTRANS · BAY AREA TOLL AUTHORITY · CALIFORNIA TRANSPORTATION COMMISSION

Released: May 2007



Toll Bridge Seismic Retrofit and Regional Measure 1 Programs

Monthly Progress Report
April 2007

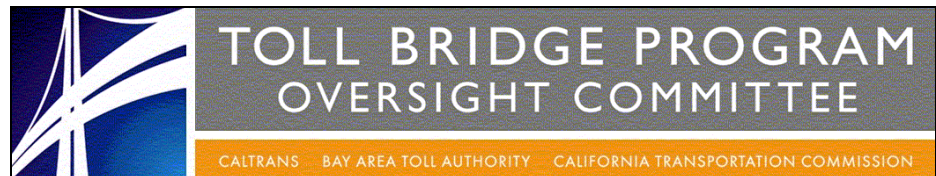
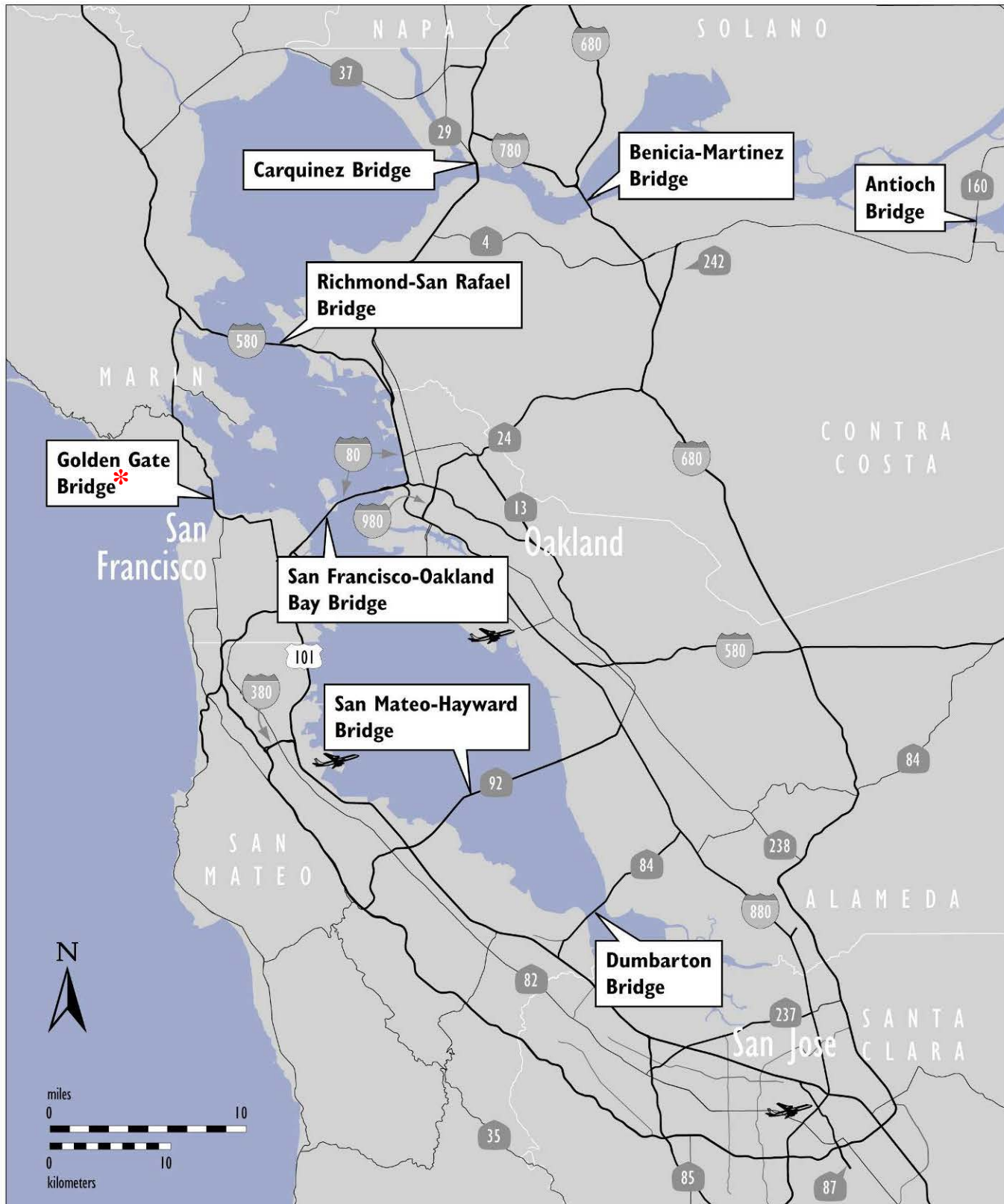


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Toll Bridges of the San Francisco Bay Area



* Under the Jurisdiction of the Golden Gate Bridge, Highway and Transportation District

INTRODUCTION

In July 2005, Assembly Bill 144, Hancock (AB 144) created the Toll Bridge Project Oversight Committee (TBPOC) to implement a project oversight and project control process for the Benicia-Martinez Bridge project and the state toll bridge seismic retrofit program projects. Comprised of the Caltrans Director, the Bay Area Toll Authority (BATA) Executive Director and the Executive Director of the California Transportation Commission (CTC), the TBPOC's project oversight and control processes include but are not limited to reviewing bid specifications and documents, providing field staff to review ongoing costs, reviewing and approving significant change orders and claims in excess of \$1 million (as defined by the committee) and preparing project reports.

AB 144 identified the Toll Bridge Seismic Retrofit Program and the new Benicia-Martinez Bridge Project as being under the direct oversight of the TBPOC. The Toll Bridge Seismic Retrofit Program includes:

Toll Bridge Seismic Retrofit Projects	Seismic Safety Status
San Francisco-Oakland Bay Bridge East Span Replacement	Construction
San Francisco-Oakland Bay Bridge West Approach Replacement	Construction
San Francisco-Oakland Bay Bridge West Span Seismic Retrofit	Complete
San Mateo-Hayward Bridge Seismic Retrofit	Complete
Richmond-San Rafael Bridge Seismic Retrofit	Complete
Eastbound Carquinez Bridge Seismic Retrofit	Complete
Benicia-Martinez Bridge Seismic Retrofit	Complete
San Diego-Coronado Bridge Seismic Retrofit	Complete
Vincent Thomas Bridge Seismic Retrofit	Complete

The new Benicia-Martinez Bridge is part of a larger program of toll-funded projects, called the Regional Measure 1 (RM1) Toll Bridge Program, under the responsibility of the BATA. While the rest of the projects in the RM1 program are not directly under the responsibility of the TBPOC, BATA and Caltrans (CT) will continue to report on their progress as an informational item. The RM1 program includes:

RM1 Projects	Open to Traffic Status
New Benicia-Martinez Bridge	Construction
1927 Carquinez Bridge Demolition	Construction
Interstate 880/State Route 92 Interchange Reconstruction	Advertised
Richmond-San Rafael Bridge Deck Overlay Rehabilitation	Open
Richmond-San Rafael Bridge Trestle, Fender & Deck Joint Rehabilitation	Open
Westbound Carquinez Bridge Replacement	Open
San Mateo-Hayward Bridge Widening	Open
State Route 84 Bayfront Expressway Widening	Open
Richmond Parkway	Open

This report focuses on identifying critical project issues and monitoring project cost and schedule performance for the projects as measured against approved budgets and schedule milestones. This report is intended to fulfill Caltrans' requirement to provide monthly project progress reporting to the TBPOC under Section 30952.05 of the Streets and Highway Code.

EXECUTIVE SUMMARY

Toll Bridge Seismic Retrofit Program—Cost (\$Millions)

Project	Work Status	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (03/2007)	Cost To Date (02/2007)	Cost Forecast*	At- Completion Variance	Cost Status
a	b	c	d	e = c + d	f	g	h = g - e	i
SFOBB East Span Replacement Project								
Capital Outlay Support		959.4	-	959.4	480.2	977.1	17.7	●
Capital Outlay Construction								
Skyway	Construction	1,293.0	-	1,293.0	1,119.6	1,293.0	-	●
SAS E2/T1 Foundations	Construction	313.5	-	313.5	199.3	313.5	-	●
SAS Superstructure	Construction	1,753.7	-	1,753.7	256.2	1,767.4	13.7	●
YBI South/South Detour	Design/Const	131.9	-	131.9	44.1	334.4	202.5	●
YBI Transition Structures	Design	299.3	-	299.3	-	276.1	(23.2)	●
Oakland Touchdown (OTD)		283.8	-	283.8	-	302.5	18.7	
* OTD Submarine Cable	Construction	-	-	-	-	9.6	-	●
* OTD No. 1 (Westbound)	Advertised	-	-	-	-	226.5	-	●
* OTD No. 2 (Eastbound)	Design	-	-	-	-	62.0	-	●
* OTD Electrical Systems	Design	-	-	-	-	4.4	-	●
Existing Bridge Demolition	Design	239.2	-	239.2	-	222.0	(17.2)	●
Stormwater Treatment Measures	Construction	15.0	-	15.0	8.2	15.0	-	●
East Span Completed Projects		90.3	-	90.3	89.2	90.3	-	
Right-of-Way and Environmental Mitigation		72.4	-	72.4	38.8	72.4	-	●
Other Budgeted Capital		35.1	-	35.1	0.6	11.0	(24.1)	
Total SFOBB East Span Replacement Project		5,486.6	-	5,486.6	2,236.2	5,674.7	188.1	
SFOBB West Approach Replacement	Construction							●
Capital Outlay Support		120.0	-	120.0	89.3	120.0	-	
Capital Outlay Construction		309.0	-	309.0	229.4	309.0	-	
Total SFOBB West Approach Replacement		429.0	-	429.0	318.7	429.0	-	
Richmond-San Rafael Bridge Retrofit	Complete							●
Capital Outlay Support		134.0	(7.0)	127.0	125.9	127.0	-	
Capital Outlay Construction & Right-of-Way		780.0	(82.0)	698.0	665.6	698.0	-	
Total Richmond-San Rafael Bridge Retrofit		914.0	(89.0)	825.0	791.5	825.0	-	
Program Completed Projects	Complete							
Capital Outlay Support		219.8	-	219.8	219.4	219.8	-	
Capital Outlay Construction		705.6	-	705.6	698.1	705.6	-	
Total Program Completed Projects		925.4	-	925.4	917.5	925.4	-	
Miscellaneous Program Costs		30.0	-	30.0	24.7	30.0	-	
Program Contingency		900.0	89.0	989.0	-	800.9	(188.1)	
Total Toll Bridge Seismic Retrofit Program		8,685.0	-	8,685.0	4,288.6	8,685.0	-	

- Within Approved Current Schedule and Budget
 - Potential Cost and Schedule Impacts: Possible future need for Program Contingency Allocation
 - Known Cost and Schedule Impacts: Request for Program Contingency Allocation forthcoming
- Note: Details may not sum to totals due to rounding effects.

* Forecasts for the Monthly Reports are generally updated on a quarterly basis in conjunction with Risk Analysis assessments for the TBSRP Projects and the TBSRP Quarterly Reports.

*BATA will consider approval of a budget change for the South/South Detour and YBI Transition Structure Contracts in Fiscal Year 2006-2007.

Toll Bridge Seismic Retrofit Program—Schedule

Project	AB 144 / SB 66 Project Complete Baseline (07/2005)	Approved Changes (Months)	Project Complete Current Approved Schedule (03/2007)	Project Complete Schedule Forecast (03/2007)	Schedule Variance (Months)	Schedule Status	Remarks
a	b	c	d = b + c	e	f = e - d	g	h
SFOBB East Span Replacement Project							
Skyway	Apr 07	8	Dec 07	Dec 07	-	●	See page 10.
SAS E2/T1 Foundations	Jun 08	(3)	Mar 08	Mar 08	-	●	
SAS Superstructure	Mar 12	12	Mar 13	Mar 13	-	●	See Note.
YBI South/South Detour	Jul 07	36	Jun 10	Jun 10	-	●	See discussion on pages 18, 19 and 20.
YBI Transition Structures	Nov 13	12	Nov 14	Nov 14	-	●	See discussion on pages 18, 19 and 20.
Oakland Touchdown (OTD)	Nov 13	12	Nov 14	Nov 14	-	●	
• OTD Submarine Cable	n/a		Jan 08	Jan 08	-	●	Contract was awarded on January 11, 2007. See pages 9 and 21.
• OTD Westbound	n/a		Jul 09	Oct 09	3	●	
• OTD Eastbound	n/a		Nov 14	Nov 14	-	●	See Note.
Existing Bridge Demolition	Sep 14	12	Sep 15	Sep 15	-	●	See Note.
Stormwater Treatment Measures	Mar 08	-	Mar 08	Jun 07	(9)	●	Forecast based on actual award date and duration in contractor's A+B bid.
Open to Traffic Date: Westbound	Sep 11	12	Sep 12	Sep 12	-	●	See Note.
Open to Traffic Date: Eastbound	Sep 12	12	Sep 13	Sep 13	-	●	See Note.
SFOBB West Approach Replacement	Aug 09	-	Aug 09	Aug 09	-	●	
Richmond-San Rafael Bridge							
• Seismic Retrofit	Aug 05	-	Aug 05	Oct 05	2	●	Seismic retrofit completed July 29, 2005. Formal acceptance of contract October 28, 2005. \$89 million has been transferred to Program Contingency. See page 33.
• Public Access Project	n/a	-	May 07	May 07	-	●	

Note: Schedules for selected projects and the Open to Traffic dates were extended by 12 months from the AB144/SB66 baseline schedule due to Addenda #5 and #7 on the SAS Superstructure contract.

Regional Measure 1 Program—Cost (\$Millions)

Project	Work Status	BATA Budget (07/2005)	Approved Changes	Current Approved Budget (03/2007)	Cost To Date (02/2007)	Cost Forecast*	At- Completion Variance	Cost Status
a	b	c	d	e = c + d	f	g	h = g - e	i
New Benicia-Martinez Bridge Project	Construction							●
Capital Outlay Support		157.1	24.8	181.8	165.7	181.8		
Capital Outlay Construction		861.6	143.1	1,004.7	900.4	1,004.7		
Capital Outlay Right-of-Way		20.4	(0.1)	20.3	12.3	20.3		
Project Reserve		20.8	35.3	56.2	-	56.2		
Total New Benicia-Martinez Bridge Project		1,059.9	203.1	1,263.0	1,078.4	1,263.0		
Carquinez Bridge Replacement Project	Construction							●
Capital Outlay Support		124.4	(1.1)	123.3	118.7	123.2	(0.1)	
Capital Outlay Construction		381.2	3.3	384.5	366.8	384.3	(0.2)	
Capital Outlay Right-of-Way		10.5	-	10.5	9.9	10.5	-	
Project Reserve		12.1	(2.2)	9.9	-	10.2	0.3	
Total Carquinez Bridge Replacement Project		528.2	-	528.2	495.4	528.2	-	
I-880/SR-92 Interchange Reconstruction	Advertised							●
Capital Outlay Support		28.8	-	28.8	30.9	51.7	22.9	
Capital Outlay Construction		94.8	-	94.8	-	122.5	27.7	
Capital Outlay Right-of-Way		9.9	-	9.9	8.3	12.4	2.5	
Project Reserve		0.3	-	0.3	-	9.7	9.4	
Total I-880/SR-92 Interchange Reconstruction		133.8	-	133.8	39.2	196.3	62.5	
Program Completed Projects	Complete							
Capital Outlay Support		62.0	(4.0)	58.0	57.3	59.9	1.9	
Capital Outlay Construction		324.4	2.5	326.9	290.5	317.3	(9.6)	
Capital Outlay Right-of-Way		1.7	-	1.7	0.5	0.8	(0.9)	
Project Reserve		2.6	1.5	4.1	-	1.8	(2.3)	
Total Program Completed Projects		390.7	-	390.7	348.3	379.8	(10.9)	
Total Regional Measure 1 Program		2,112.6	203.1	2,315.7	1,961.3	2,367.3	51.6	

● Within Approved Current Schedule and Budget

● Potential Cost and Schedule Impacts: Possible future need for Program Contingency Allocation

● Known Cost and Schedule Impacts: Request for Program Contingency Allocation forthcoming

Note: Details may not sum to totals due to rounding effects.

* Forecasts for the Monthly Reports are generally updated on a quarterly basis in conjunction with Risk Analysis assessments for the TBSRP Projects and the TBSRP Quarterly Reports.

*BATA will consider approval of a budget change for the South/South Detour and YBI Transition Structure Contracts in Fiscal Year 2006-2007.

Regional Measure 1 Program—Schedule

Project	BATA Project Complete Baseline (07/2005)	Approved Changes (Months)	Project Complete Current Approved Schedule (03/2007)	Project Complete Schedule Forecast (03/2007)	Schedule Variance (Months)	Schedule Status	Remarks
a	b	c	d= b + c	e	f= e - d	g	h
New Benicia-Martinez Bridge Project							
• New Benicia-Martinez Bridge	Dec 07	-	Dec 07	Dec 07	-	●	
• I-680/I-780 Interchange Replacement	Dec 07	-	Dec 07	Feb 08	2	●	Final electrical work to be completed after Bridge Open to Traffic. Structure was substantially completed as of December 1, 2006. See page 46.
• Open to Traffic Date	Dec 07	-	Dec 07	Dec 07	-	●	
1927 Carquinez Bridge Demolition Project	Dec 07	-	Dec 07	Mar 08	3	●	
I-880/SR-92 Interchange Reconstruction	Nov 10	-	Nov 10	Jun 11	7	●	Delay in the procurement of right-of-way is impacting the cost/schedule for this project. See page 50.

Highlights of Project/Program Activities and TBPOC Actions for April 2007

Toll Bridge Seismic Retrofit Program

SFOBB East Span Seismic Replacement Project

- ◆ On the SAS Marine Foundations Contract, all 13 rock sockets that tie the SAS tower foundation (T1) to bedrock have been installed. The T1 footing box was set into place on March 17, 2007. Work is now progressing in preparation of the T1 bottom slab concrete placement. (See page 15).
- ◆ On the Self-Anchored Suspension Span (SAS) Superstructure Contract, Caltrans has accepted as noted the baseline schedule submitted by the American Bridge/Fluor Joint Venture (ABF). Zhenhua Port Machinery Company (ZPMC) of Shanghai, China is currently setting up their facilities to fabricate the steel tower and deck sections. ZPMC is preparing initial test mock-ups of the sections and plans to begin production fabrication later in 2007. ABF completed the design of the crane barge to be used to lift the heavy tower and deck sections. Barge fabrication has started in Oregon. Falsework erection for the W2 Capbeam on the Yerba Buena Island has also started. (See page 15).
- ◆ On the Yerba Buena Island (YBI) South/South Detour (SSD) and Transition Structures (YBITS) contracts, the TBPOC approved on February 15, 2007 to advance foundation and retrofit work from the YBITS contract to the SSD contract. Advancing the work will reduce overall project schedule risk by taking work off the critical path for the East Span project and will result in a net \$180 million increase in the project costs that will be covered by the existing program contingency and will not increase the AB144 program budget. Originally part of the YBITS Advanced Work, the W3L work that is now part of the SSD has been completed. Advancement of retrofit work near the Yerba Buena Island Tunnel will require a three-day closure of the Bay Bridge to replace the upper roadway from the east span to the tunnel. Currently, the closure is scheduled for Labor Day weekend 2007. The construction suspension of the tie-ins was lifted effective January 12, 2007. (See page 19).

SFOBB West Approach Seismic Retrofit Project

- ◆ On the weekend of March 30, 2007, Phase 1 Demolition of the final 3000-foot section of the old I-80 freeway structure from 2nd street (near the Historic Clocktower) to 4th Street started on both the upper and lower decks and will continue through mid-April 2007. The public outreach will continue throughout the demolition, which will last through mid-April and include all of the upcoming impacts from future activities. Such future activities include pile installation and falsework erection over the next year which will have significant impacts to the local residents and businesses (See page 27).

Regional Measure 1 Program

I-880/SR-92 Interchange Project

- ◆ Caltrans advertised this contract on January 8, 2007. Bid opening is scheduled for May 5, 2007. The Project received right-of-way clearance on March 30, 2007. Expected duration of this particular project is for four (4) years (see page 50).



PROJECT / CONTRACT REPORTS

Toll Bridge Seismic Retrofit Program

San Francisco-Oakland Bay Bridge (SFOBB) East Span Replacement Project Summary

- Skyway Contract
- Self-Anchored Suspension (SAS) E2/T1 Foundations Contract
- Self-Anchored Suspension (SAS) Superstructure Contract
- Yerba Buena Island (YBI)
 - * Yerba Buena Island (YBI) South/South Detour Contract
 - * Yerba Buena Island (YBI) Transition Structure Contracts
- Oakland Touchdown (OTD)
 - * Oakland Touchdown (OTD) Submarine Cable Relocation Contract
 - * Oakland Touchdown (OTD) #1 Contract
 - * Oakland Touchdown (OTD) #2 Contract
- Other Major Contracts
- Other Contracts and Related Project Work

San Francisco-Oakland Bay Bridge (SFOBB) West Approach Replacement Project

Richmond-San Rafael Bridge Seismic Retrofit Project

Other Completed Seismic Retrofit Projects

Toll Bridge Seismic Retrofit Program

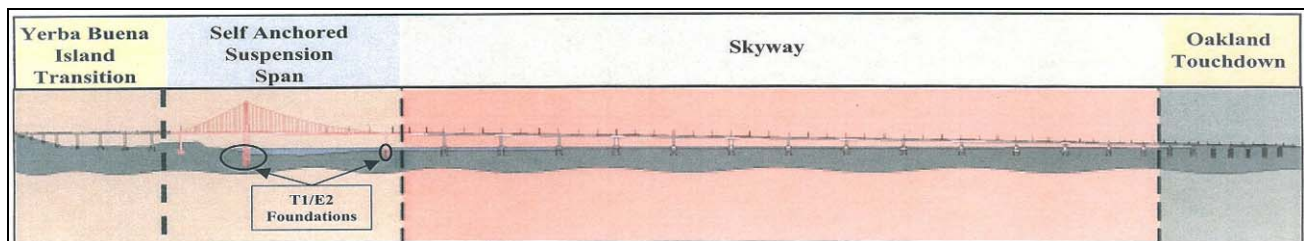
San Francisco-Oakland Bay Bridge (SFOBB) East Span Replacement Project Summary

Project Description: The East Span will be seismically retrofitted through the complete replacement of the existing span. The remaining effort for this project consists of the following contracts: Skyway—construction of two parallel concrete structures, each approximately 1.3 miles in length; Self-Anchored Suspension (SAS) Foundation—construction of SAS marine foundations; SAS Superstructure—construction of a self-anchored 385-meter main span superstructure incorporating a 160-meter fabricated structural steel tower with a main cable and inclined suspenders that will support steel orthotropic decks; Yerba Buena Island (YBI) South/South Detour—design and construction of a temporary double-deck bypass structure that will detour traffic to the existing SFOBB while completing the westerly permanent tie-in structure of the new East Span at Yerba Buena Island; YBI Structures—construction of a new structure connecting the western end of the self-anchored suspension to the Yerba Buena Island viaduct, which will be retrofitted; Oakland Touchdown—at the Oakland end of the East Span, construction of two parallel, cast-in-place post-tensioned concrete viaducts, which join the skyway to the at-grade Oakland approach fill; and Existing Bridge Demolition—demolition of the existing 1936 SFOBB East Span structure after the construction and placement of traffic onto the new East Span.

SFOBB East Span Replacement Cost Summary (\$Millions)

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (03/2007)	Cost To Date (02/2007)	Cost Forecast (03/2007)	Variance
a	b	c	d = b + c	e	f	g = f - d
Capital Outlay Support	959.4	-	959.4	480.2	977.1	17.7
Capital Outlay	-	-	-	-	-	-
Skyway	1,293.0	-	1,293.0	1,119.6	1,293.0	-
SAS E2/T1 Foundations	313.5	-	313.5	199.3	313.5	-
SAS Superstructure	1,753.7	-	1,753.7	256.2	1,767.4	13.7
YBI South/South Detour	131.9	-	131.9	44.1	334.4	202.5
YBI Structures	299.3	-	299.3	-	276.1	(23.2)
Oakland Touchdown (OTD)	283.8	-	283.8	-	302.5	18.7
* OTD Submarine Cable				-	9.6	
* OTD No. 1 (Westbound)				-	226.5	
* OTD No. 2 (Eastbound)				-	62.0	
* OTD Electrical Systems				-	4.4	
Existing Bridge Demolition	239.2	-	239.2	-	222.0	(17.2)
Stormwater Treatment Measures	15.0	-	15.0	8.2	15.0	-
East Span Completed Projects	90.3	-	90.3	89.2	90.3	-
Right-of-Way and Environmental Mitigation	72.4	-	72.4	38.8	72.4	-
Other Budgeted Capital	35.1	-	35.1	0.6	11.0	(24.1)
TOTAL	5,486.6	-	5,486.6	2,236.2	5,674.7	188.1

Note: Details may not sum to totals due to rounding effects.



SFOBB East Span Replacement Project

SFOBB East Span Replacement Schedule Summary

Contract	AB 144/SB 66 Contract Completion Baseline (07/2005)	Approved Changes (Months)	Contract Complete Current Approved Schedule (03/2007)	Contract Complete Schedule Forecast (03/2007)	Schedule Variance (Months)
Skyway	April 2007	8	December 2007	December 2007	-
YBI South / South Detour*	July 2007	36	June 2010	June 2010	-
Stormwater Treatment Measures	March 2008	-	March 2008	June 2007	(9)
SAS E2/T1 Foundations	June 2008	(3)	March 2008	March 2008	-
Open to Traffic: Westbound	September 2011	12	September 2012	September 2012	-
SAS Superstructure	March 2012	12	March 2013	March 2013	-
Open to Traffic: Eastbound	September 2012	12	September 2013	September 2013	-
Oakland Touchdown (OTD)	December 2013	12	December 2014	December 2014	-
* OTD Submarine Cable	n/a		January 2008	January 2008	-
* OTD No. 1 (Westbound)	n/a		July 2009	October 2009	3
* OTD No. 2 (Eastbound)	n/a		November 2014	November 2014	-
YBI Transition Structure*	November 2013	12	November 2014	November 2014	-
Existing Bridge Demolition*	September 2014	12	September 2015	September 2015	-

* Contract schedules being further assessed due to changes in SAS schedule.

Project Status: Construction is currently ongoing for the Skyway, YBI South/South Detour, SAS E2/T1 Foundations, Stormwater Treatment Measures and the OTD Submarine Cable contracts. Contracts in design include the OTD #1 (westbound), OTD #2 (eastbound), the YBI Transition Structure (YBITS) Contract #1, YBITS Contract #2 and Existing Bridge Demolition contract. Design of each contract is proceeding per its schedule requirements.

Project Issues: All projects except Demolition have a Risk Response Team and a Risk Register incorporating quantitative risk analyses. A preliminary risk register has also been developed for Capital Outlay Support (COS) costs, as well as a program-level risk register that captures risks common to all project. The development of a quantitative COS risk analysis is in progress. The Risk Response Teams have focused attention on developing and executing risk response actions for their most significant risks. Many of the actions have been effective, as evidenced by a reduction of risk impacts on the Skyway and E2/T1 contracts from the previous quarter. The effort to develop and execute risk response actions to mitigate the cost and schedule impacts posed by risk issues continues to be a high priority.

Recent TBPOC Actions: See the following contract detail pages for specific TBPOC actions on East Span contracts.

Toll Bridge Seismic Retrofit Program

San Francisco-Oakland Bay Bridge (SFOBB) East Span Replacement Project► **SKYWAY CONTRACT**

Contract Description: The Skyway contract constructs two parallel pre-cast concrete approach spans from Oakland to the self-anchored suspension span near Yerba Buena Island.

Skyway Cost Summary (\$Millions)

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (03/2007)	Cost To Date (02/2007)	Cost Forecast (03/2007)	Variance
a	b	c	d = b + c	e	f	g = f - d
East Span - Skyway						
Capital Outlay Support	197.0	-	197.0	156.0	197.0	-
Capital Outlay Construction	1,293.0	-	1,293.0	1,119.5	1,293.0	-
TOTAL	1,490.0	-	1,490.0	1,275.5	1,490.0	-

Note: Details may not sum to totals due to rounding effects.

Skyway Schedule Summary

Contract	AB 144/SB 66 Contract Completion Baseline (07/2005)	Approved Changes (Months)	Contract Complete Current Approved Schedule (03/2007)	Contract Complete Schedule Forecast (03/2007)	Schedule Variance (Months)
East Span - Skyway	April 2007	8	December 2007	December 2007	-

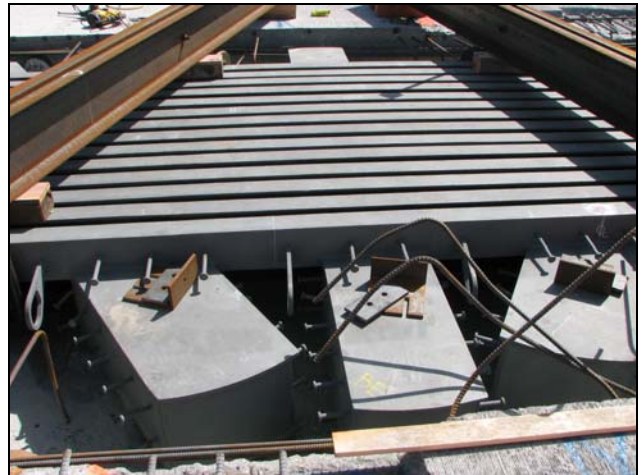
Contract Status: The Skyway contract is currently in construction and is 94% complete as of **March 20, 2007**.

The foundation work is complete including the installation of the fenders around six of the pier footings. The eastbound and westbound structures are 100% complete with the erection of all segments. Remaining work includes final post-tensioning of the segments to tie the segments together, installation of the cantilevered bike path and service platforms, electrical work, and other punchlist work.

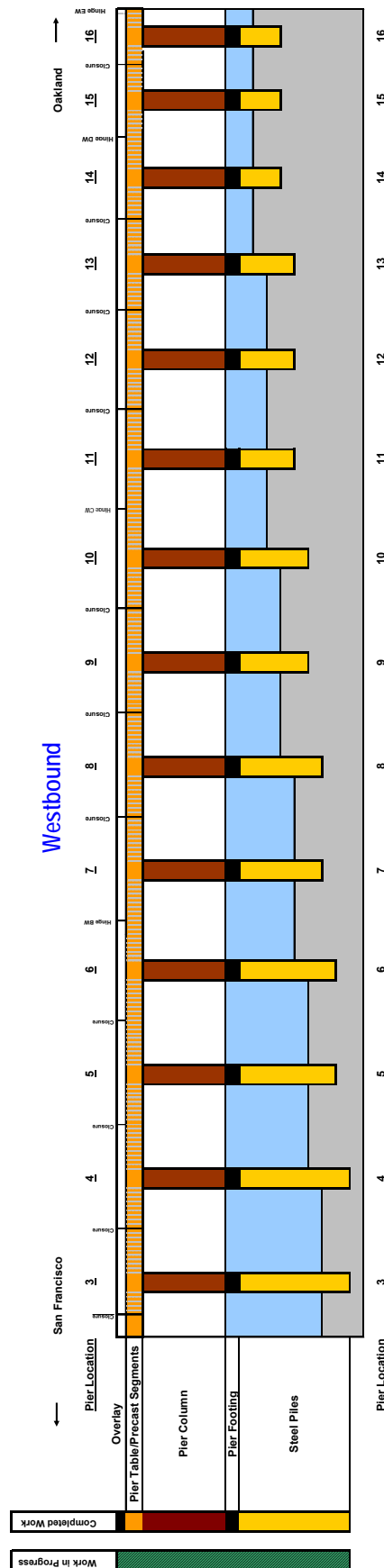
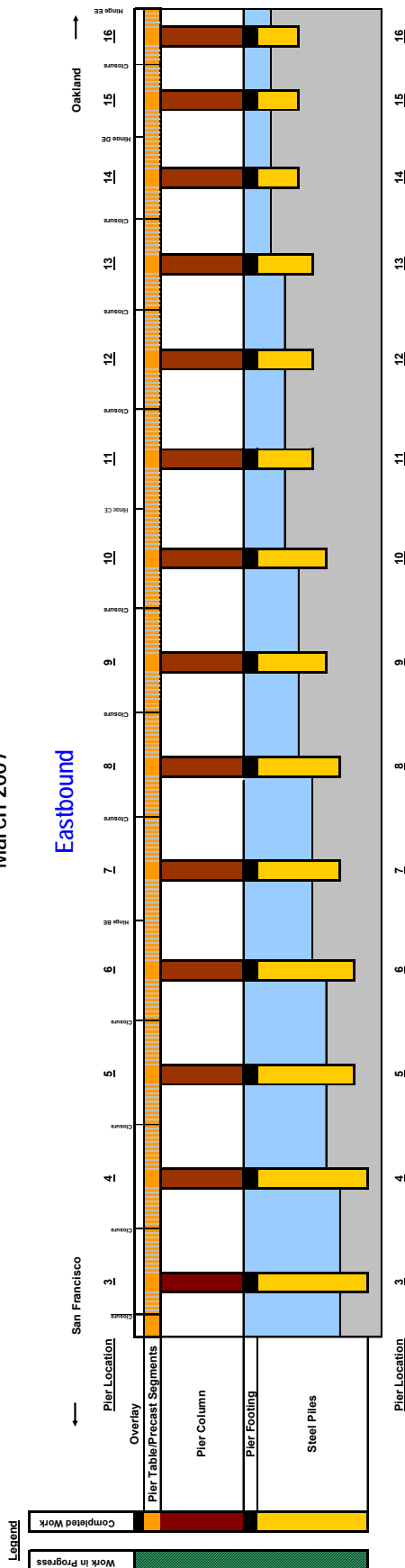
Contract Issues:

Issue	Mitigating Action
KFM issued 15 NOPC's on behalf of USI for welding issues related to the fabrication of the Steel Orthotropic Box Girders (SOBG).	USI completed the fabrication of the SOBG. All NOPC's filed were recommended to be heard by the Dispute Review Board. NOPC's #16, 18, 22, and 29 regarding the SOBG issues was heard by the Dispute Resolution Board (DRB) in February 2007, with a two-day hearing. The Board's decision is being evaluated by Caltrans and the TBPOC. NOPC's #24 and 27 regarding the SOBG issues was heard by the DRB in March 2007, with a two-day hearing.

Recent TBPOC Actions: None.

Contract Photographs*Skyway - Looking East**Erected Service Platform**Eastbound - Hinge BE Expansion Joint**Hinge BE - Expansion Joint*

San Francisco-Oakland Bay Bridge East Span Replacement Project - Skyway Contract March 2007



Toll Bridge Seismic Retrofit Program

San Francisco-Oakland Bay Bridge (SFOBB) East Span Replacement Project

► SELF-ANCHORED SUSPENSION (SAS) E2/T1 FOUNDATIONS CONTRACT

Contract Description: The Self-Anchored Suspension (SAS) E2/T1 Foundations contract constructs the main tower foundation at T1 and the adjacent east foundation at E2.

SAS E2/T1 Foundations Cost Summary (\$ Millions)

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (03/2007)	Cost To Date (02/2007)	Cost Forecast (03/2007)	Variance
a	b	c	d = b + c	e	f	g = f - d
East Span - SAS E2 / T1 Foundations						
Capital Outlay Support	52.5	-	52.5	19.1	52.5	-
Capital Outlay Construction	313.5	-	313.5	199.3	313.5	-
TOTAL	366.0	-	366.0	218.4	366.0	-

Note: Details may not sum to totals due to rounding effects.

SAS E2/T1 Foundations Schedule Summary

Contract	AB 144/SB 66 Contract Completion Baseline (07/2005)	Approved Changes (Months)	Contract Complete Current Approved Schedule (03/2007)	Contract Complete Schedule Forecast (03/2007)	Schedule Variance (Months)
East Span - SAS E2 / T1 Foundations	June 2008	(3)	March 2008	March 2008	-

Contract Status: The contract is 77% complete as of March 20, 2007. On the SAS Marine Foundations Contract, all 13 rock sockets that tie the SAS tower foundation (T1) to bedrock have been installed. The T1 footing box was set into place on March 17, 2007. Work is now progressing in preparation of the T1 bottom slab concrete placement. At the E2 Foundation, all piles have been driven into place. Work is continuing on welding the pile heads, connections and connector girders.

Contract Issues: None.

Recent TBPOC Actions: None.

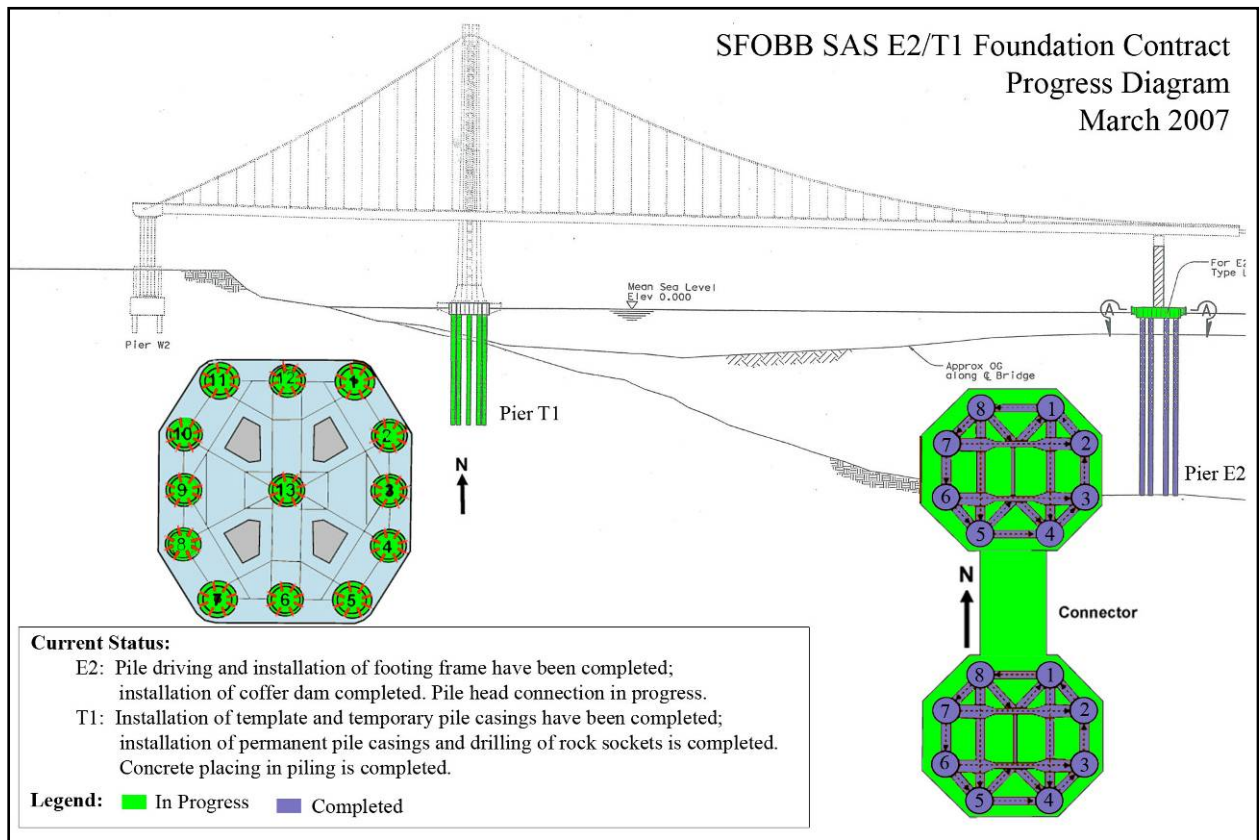


E2 - Pile Cage



T1 - Bottom Slab Concrete

Project Photographs



T1 - Footing Box (1)



T1- Footing Box (2)

Toll Bridge Seismic Retrofit Program

San Francisco-Oakland Bay Bridge (SFOBB) East Span Replacement Project

► SELF-ANCHORED SUSPENSION (SAS) SUPERSTRUCTURE CONTRACT

Contract Description: The Self-Anchored Suspension (SAS) Superstructure contract constructs a signature tower span between the skyway and the Yerba Buena Island transition structure. Work on the SAS bridge has been split between three contracts—the SAS Superstructure (under construction), the SAS E2/T1 Foundation (under construction), and the SAS W2 Foundation (completed).

SAS Superstructure Cost Summary (\$Millions)

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (03/2007)	Cost To Date (02/2007)	Cost Forecast (03/2007)	Variance
a	B	c	d = b + c	e	f	g = f - d
East Span - SAS Superstructure						
Capital Outlay Support	214.6	-	214.6	31.5	214.6	-
Capital Outlay Construction	1,753.7	-	1,753.7	256.2	1,767.4	13.7
TOTAL	1,968.3	-	1,968.3	287.7	1,982.0	13.7

Note: Details may not sum to totals due to rounding effects.

SAS Superstructure Schedule Summary

Contract	AB 144/SB 66 Contract Completion Baseline (07/2005)	Approved Changes (Months)	Contract Complete Current Approved Schedule (03/2007)	Contract Complete Schedule Forecast (03/2007)	Schedule Variance (Months)
East Span - SAS Superstructure	March 2012	12	March 2013	March 2013	-

Contract Status: The contract is 18% complete as of March 20, 2007. The contractor, American Bridge Fluor Enterprises, Inc., a Joint Venture (ABF), continues to mobilize staff to the field office on Pier 7. ABF and their subcontractors have been preparing and submitting requests for information and submittals for Caltrans review and response, including the baseline schedule. The latest baseline schedule submitted by ABF was accepted as noted by Caltrans. ABF has completed the design of the crane barge to be used to lift the heavy tower and deck sections. Fabrication has started in Oregon on the barge. Falsework erection for the W2 Capbeam on the Yerba Buena Island has started.

Zhenhua Port Machinery Company (ZPMC) of Shanghai, China is currently setting up their facilities to fabricate the steel tower and deck sections. ZPMC is preparing initial test mock-ups of the sections and plans to begin production fabrication later in 2007.

The forecast \$13.7 million increase in construction costs on the SAS contract, from the approved budget, reflects actions taken to encourage additional bidders on the contract.

Contract Issues:

Issue	Mitigating Action
Caltrans has identified the need for added resources to monitor work at the ZPMC steel fabrication facilities in China.	Caltrans and BATA are working together to set up facilities and to organize resources that will ensure an effective Owner's presence in the steel fabrication shops.
Potential for cost increases during construction due to steel plate conflicts. Applies to structural steel, including the towers and box girders.	Establish Working Drawing Campus with Contractor to facilitate discussion about conflicts and meet regularly. Caltrans has constructed models and identified conflicts, for which CCOs are to be prepared. The number of required mockups in the contract was reduced by addendum due to concerns about time for construction. Could continue to look at potential for mockups. Facilitated Cost Reduction Incentive Proposal (CRIP) sessions to discuss additional changes and improvements at the beginning of the contract.

Recent TBPOC Actions: In February 2007, the TBPOC approved SFOBB SAS Contract Change Order (CCO) 21, "Tower Splice Changes" at a not to exceed value of \$2.3 Million.

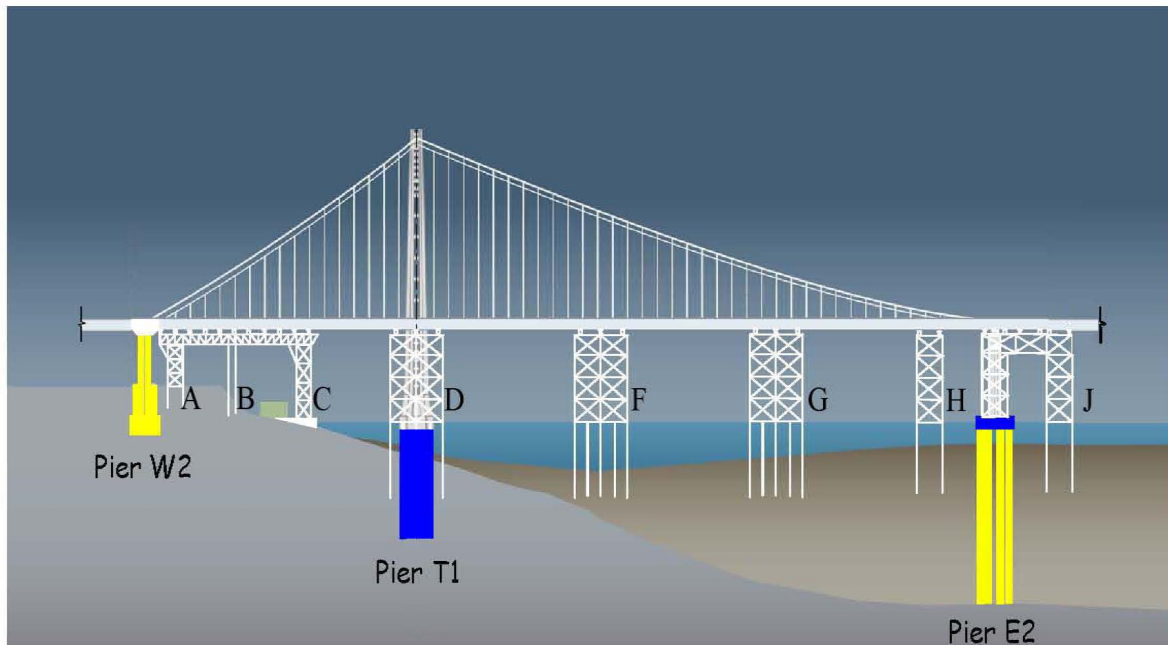
Contract Photographs

SAS - W2 Preparation for Falsework Erection

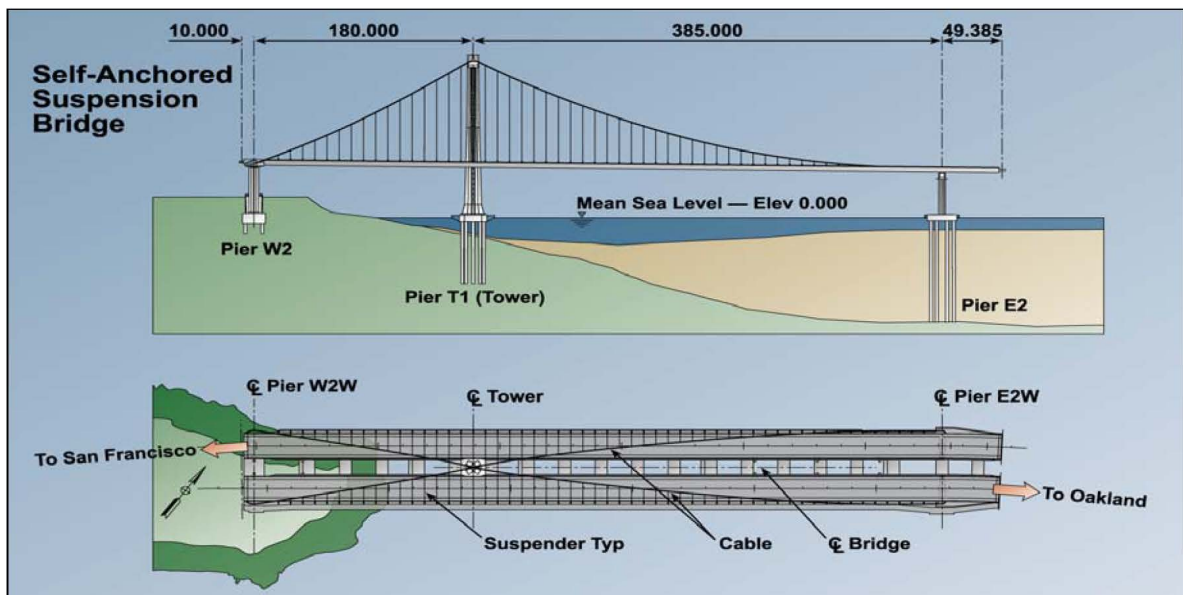


W2 - Preparation for Falsework Erection

SAS Superstructure Construction Progress



- Field work to be completed
- Field work in progress
- Completed field work



Toll Bridge Seismic Retrofit Program

San Francisco-Oakland Bay Bridge (SFOBB) East Span Replacement Project► **YERBA BUENA ISLAND (YBI)**• **SOUTH/SOUTH DETOUR CONTRACT**

Contract Description: The Yerba Buena Island (YBI) South/South Detour (SSD) Contract constructs a temporary detour from the YBI tunnel to the existing east span of the Bay Bridge. This detour maintains traffic on the existing bridge while the YBI Transition Structure Contract completes the tie-in from the SAS to the existing tunnel.

YBI South/South Detour Cost Summary (\$Millions)

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (03/2007)	Cost To Date (02/2007)	Cost Forecast (03/2007)	Variance
a	b	c	d = b + c	e	f	g = f - d
YBI South/South Detour						
Capital Outlay Support	29.5	-	29.5	19.7	29.5	-
Capital Outlay Construction	131.9	-	131.9	44.1	334.4	202.5
TOTAL	161.4	-	161.4	63.8	363.9	202.5

Note: Details may not sum to totals due to rounding effects.

YBI South/South Detour Schedule Summary

Contract	AB 144/SB 66 Contract Completion Baseline (07/2005)	Approved Changes (Months)	Contract Complete Current Approved Schedule (03/2007)	Contract Complete Schedule Forecast (03/2007)	Schedule Variance (Months)
YBI South / South Detour *	July 2007	36	Jun 2010	Jun 2010	-

* Contract schedule under assessment. See Contract Issues below.

Contract Status: The South/South Detour (SSD) contract was awarded in early 2004 to construct a temporary detour structure providing for, at that time, a new bridge opening in 2006. Due to the re-advertisement of the SAS superstructure contract in 2005, bridge opening was rescheduled to 2013, which necessitated a temporary suspension of the SSD contract and design changes. The required suspension of work and design revisions has resulted in increased cost for the SSD Contract.

In 2006, the TBPOC approved a plan to pace work on the project, to have Caltrans assume design responsibility over the east and west tie-ins, and to make changes to the detour structures to allow it to stand in place alone for a longer duration than originally intended. The SSD contract is now forecasted to be completed in 2010 in time for the revised opening date of the new bridge.

In addition to the revised contract completion date, the TBPOC approved on February 15, 2007 to advance foundation and retrofit work from the Yerba Buena Island Transition Structures (YBITS) contract to the South/South Detour contract. Advancing the work will reduce overall project schedule risk by taking work off the critical path for the East Span project while making more effective use of the extended SSD contract duration, and will enable potential acceleration of the SAS construction pending negotiation with American Bridge.

Advancing the transition structure work, completing the tie-in work under Caltrans design, and pacing of the remaining SSD work will result in a net \$180 million increase in the project costs from the approved budget. The increase will be covered by the existing program contingency and will not increase the AB144 program budget.

The construction suspension of the tie-ins was lifted effective January 12, 2007. Prior to the suspension, foundations for the temporary detour were nearly completed. Fabrication of the temporary viaduct in Korea is progressing. The contractor completed the foundation and column at pier W3 of YBITS and has started work on retrofitting of the upper deck approach to the Yerba Buena Island Tunnel. The upper deck approach retrofit will require a three-day closure of the Bay Bridge to roll in a replacement upper roadway. Currently, the closure is scheduled for Labor Day weekend 2007. The contractor has completed the removal of the north overhang of the existing bridge.

Contract Issues: None.

Recent TBPOC Actions: In March 2007, the TBPOC approved plans for the Labor Day 2007 weekend closure of the Bay Bridge. See contract status above.

Contract Photographs



WTI Phase 1 - Demolition of North Overhang Retaining Wall



WTI Phase 1 - North Side



Viaduct - Bent Cap Falsework (1)



Viaduct - Bent Cap Falsework (2)

Toll Bridge Seismic Retrofit Program

San Francisco-Oakland Bay Bridge (SFOBB) East Span Replacement Project

► YERBA BUENA ISLAND (YBI)

• YBI TRANSITION STRUCTURE CONTRACTS

Contract Description: The YBI Transition Structure contracts will construct the mainline YBI transition structures (YBITS) that will connect the SAS portion of the new bridge to the existing YBI tunnel. YBITS #1 will construct the mainline approach structure from the new bridge to the YBI tunnel. YBITS #2 will demolish the South/South Detour (SSD) temporary structure, complete the new eastbound on-ramp, complete the bike path from the bridge to YBI and reconstruct local affected facilities at YBI. A YBI Landscaping Contract will restore slopes and vegetation in areas affected by YBI construction. Caltrans is still reviewing and finalizing YBITS contract split options.

YBI Transition Structure Cost Summary (\$Millions)

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (03/2007)	Cost To Date (02/2007)	Cost Forecast (03/2007)	Variance
a	b	c	d = b + c	e	f	g = f - d
YBI Transition Structure						
Capital Outlay Support	78.7	-	78.7	12.8	78.7	-
Capital Outlay Construction	299.3	-	299.3	-	276.1	(23.2)
TOTAL	378.0	-	378.0	12.8	354.8	(23.2)

Note: Details may not sum to totals due to rounding effects.

YBI Transition Structure Schedule Summary

Contract	AB 144/SB 66 Contract Completion Baseline (07/2005)	Approved Changes (Months)	Contract Complete Current Approved Schedule (03/2007)	Contract Complete Schedule Forecast (03/2007)	Schedule Variance (Months)
YBI Transition Structure	November 2013	12	November 2014	November 2014	-

Contract Status: In February 2007, the TBPOC approved a plan to accelerate portions of the YBITS work to the SSD contract. Advancing work from the YBITS contract to the SSD contract will result in a forecast cost reduction of \$23.2 million. Caltrans is preparing the remaining portion of the YBITS contract for advertisement in 2008. See SSD Contract Status on page 18 for more information.

Contract Issues: None.

Recent TBPOC Actions: In February 2007, the TBPOC approved a plan to accelerate YBITS work on the SSD contract.

Toll Bridge Seismic Retrofit Program

San Francisco-Oakland Bay Bridge (SFOBB) East Span Replacement Project

► OAKLAND TOUCHDOWN

• OAKLAND TOUCHDOWN SUBMARINE CABLE RELOCATION CONTRACT

Contract Description: The OTD Submarine Cable Contract will replace the existing submarine electrical cable from Oakland to Treasure Island, and will be completed ahead of OTD Contract No. 1 to avoid possible construction conflicts.

Oakland Touchdown Submarine Cable Relocation Cost Summary (\$Millions)

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (03/2007)	Cost To Date (02/2007)	Cost Forecast (03/2007)	Variance
a	b	c	d = b + c	e	f	g = f - d
OTD Submarine Cable						
Capital Outlay Support	-	-	-	0.4	3.0	-
Capital Outlay Construction	-	-	-	-	9.6	-
TOTAL	-	-	-	0.4	12.6	-

Note: Details may not sum to totals due to rounding effects. The allocation of AB144/SB 66 budgets is proceeding. Budget amount is TBD. Overall OTD budgets and forecasts are shown on page 2.

Oakland Touchdown Submarine Cable Relocation Schedule Summary

Contract	AB 144/SB 66 Contract Completion Baseline (07/2005)	Approved Changes (Months)	Contract Complete Current Approved Schedule (03/2007)	Contract Complete Schedule Forecast (03/2007)	Schedule Variance (Months)
OTD Submarine Cable	-	-	January 2008	January 2008	-

Contract Status: On January 11, 2007, Caltrans approved a contract with Manson Construction for the replacement of an existing submerged electrical cable from Oakland to Treasure Island with two cables located away from the Oakland Touchdown construction area. The contractor is currently preparing contract submittals for Caltrans review and has placed an order for the cabling. The cable is expected in the Bay Area in the summer of 2007.

Current contract allotment to install two submarine electrical cables is \$11.5 million. Additional non-program funding to support this allocation beyond the \$9.6 million of available programs funds has been made available by the Treasure Island Development Authority.

Contract Issues:

Issue	Mitigating Action
If the contractor cannot procure and install the cables within the specified timeframes, the cable relocation project could potentially delay work on the OTD #1 contract.	The cable has been ordered by the Contractor, and work around specification language has been developed for the OTD #1 contract in case the cables are delayed.

Recent TBPOC Actions: None.

Toll Bridge Seismic Retrofit Program

San Francisco-Oakland Bay Bridge (SFOBB) East Span Replacement Project

► OAKLAND TOUCHDOWN

• OAKLAND TOUCHDOWN #1 CONTRACT

Contract Description: The Oakland Touchdown #1 Contract includes construction of all marine foundations, and land foundations (except for the eastbound abutment), westbound bridge section, and one frame of the eastbound bridge section and roadway approach for the section connecting the new Skyway portion to the roadway west of the Oakland Toll Plaza. This contract also constructs the electrical substation and the eastbound detour roadway. Traffic will not be placed on the detour until later during OTD #2.

Oakland Touchdown #1 Cost Summary (\$Millions)

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (03/2007)	Cost To Date (02/2007)	Cost Forecast (03/2007)	Variance
a	b	c	d = b + c	e	f	g = f - d
Oakland Touchdown #1						
Capital Outlay Support	-	-	-	3.0	49.9	-
Capital Outlay Construction	-	-	-	-	226.5	-
TOTAL	-	-	-	3.0	276.4	-

Note: Details may not sum to totals due to rounding effects. The allocation of AB144/SB 66 budgets is proceeding. Budget amount is TBD. Overall OTD budgets and forecasts are shown on page 2.

Oakland Touchdown #1 Schedule Summary

Contract	AB 144/SB 66 Contract Completion Baseline (07/2005)	Approved Changes (Months)	Contract Complete Current Approved Schedule (03/2007)	Contract Complete Schedule Forecast (03/2007)	Schedule Variance (Months)
Oakland Touchdown #1	-	-	July 2009	October 2009	3

Contract Status: Design work is complete. Plans, Specifications, and Engineer's Estimate (PS&E) were submitted to the Office Engineer on September 1, 2006. Contract was advertised on February 26, 2007 with bid opening scheduled for **June 5, 2007**. The contract is being advertised with a A+B specification that requires contractors to take into account contract duration as part of their bid. The A+B specification may accelerate completion of the contract earlier than the current October 2009 forecast completion date. (Note that the A+B requirement only applies for the milestone to complete the westbound bridge section of the contract).

Contract Issues:

Issue	Mitigating Action
Delays and cost increases due to conflicts from delays to the relocation of the submarine cable.	Caltrans will be incorporating work-around specification language in the OTD 1 contract to mitigate delays due to the cable and has extended the forecast completion date of the contract to October 2009. The revised completion date will not impact the overall completion date of the project.

Recent TBPOC Actions: In September 2006, the TBPOC approved the Plans, Specifications and Estimates for the OTD #1 contract. In October 2006, the TBPOC approved a capital outlay construction forecast of \$226.5 million.

Toll Bridge Seismic Retrofit Program

San Francisco-Oakland Bay Bridge (SFOBB) East Span Replacement Project

► OAKLAND TOUCHDOWN

• OAKLAND TOUCHDOWN #2 CONTRACT

Contract Description: The Oakland Touchdown #2 Contract includes construction of the remaining eastbound bridge section and roadway approach for the section connecting the new Skyway portion to the roadway west of the Oakland Toll Plaza. This work would occur once the westbound traffic is shifted onto the new SAS. Caltrans is also investigating the option of including the Oakland Touchdown Electrical Systems Contract, which will incorporate most of the electrical elements from OTD, as well as from other segments of the East Span.

Oakland Touchdown #2 Cost Summary (\$Millions)

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (03/2007)	Cost To Date (02/2007)	Cost Forecast (03/2007)	Variance
a	b	c	d = b + c	e	f	g = f - d
Capital Outlay Support	-	-	-	0.2	17.2	-
Capital Outlay Construction						
OTD #2	-	-	-	-	62.0	-
OTD Electrical Systems	-	-	-	-	4.4	-
TOTAL	-	-	-	0.2	83.6	-

Note: Details may not sum to totals due to rounding effects. The allocation of AB144/SB 66 budgets is proceeding. Budget amount is TBD. Overall OTD budgets and forecasts are shown on page 2.

Oakland Touchdown #2 Schedule Summary

Contract	AB 144/SB 66 Contract Completion Baseline (07/2005)	Approved Changes (Months)	Contract Complete Current Approved Schedule (03/2007)	Contract Complete Schedule Forecast (03/2007)	Schedule Variance (Months)
Oakland Touchdown #2	-	-	November 2014	November 2014	-

Contract Status: Design work for the structures portion of OTD Contract No. 2 is substantially complete. The contract will be advertised in 2010 in time for opening the SAS in the eastbound direction. Determination of contract scope for the Oakland Touchdown Electrical Systems is underway. Caltrans is also considering the option of incorporating this work into the Oakland Touchdown #2 contract.

Contract Issues: None.

Recent TBPOC Actions: None.

Toll Bridge Seismic Retrofit Program

San Francisco-Oakland Bay Bridge (SFOBB) East Span Replacement Project

► OTHER MAJOR CONTRACTS

Contract Description: Other Major Contracts include the Stormwater Treatment Measures contract, which will implement best practices for stormwater runoff treatment at the SFOBB toll plaza; and the Existing Bridge Demolition contract, which will include the complete removal of the existing 1936 east span following the opening of the new bridge.

Other Major Contracts Cost Summary (\$Millions)

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (03/2007)	Cost To Date (02/2007)	Cost Forecast (03/2007)	Variance
A	b	c	d = b + c	e	f	g = f - d
Capital Outlay Support	85.7	-	85.7	42.1	86.7	1.0
Capital Outlay Construction						
Existing Bridge Demolition	239.2	-	239.2	-	222.0	(17.2)
Stormwater Treatment Measures	15.0	-	15.0	7.3	15.0	-
Total Capital Outlay Construction	254.2	-	254.2	7.3	237.0	(17.2)
TOTAL	339.9	-	339.9	49.4	323.7	(16.2)

Note: Details may not sum to totals due to rounding effects.

Other Major Contracts Schedule Summary

Contract	AB 144/SB 66 Contract Completion Baseline (07/2005)	Approved Changes (Months)	Contract Complete Current Approved Schedule (03/2007)	Contract Complete Schedule Forecast (03/2007)	Schedule Variance (Months)	% Design Comp.
Existing Bridge Demolition	September 2014	12	September 2015	September 2015	-	10
Stormwater Treatment Measures	March 2008	-	March 2008	June 2007	(9)	N/A

Contract Status:

Stormwater Treatment Measures: The contract is 61% complete as of March 20, 2007. Some delays in the work have been experienced due to nesting birds, buried man-made objects, unidentified utilities, and discovery of unsuitable materials. The current schedule forecast shows an early completion date due to an accelerated award of the contract by Caltrans and a reduced construction contract duration that was bid by the contractor as part of an A+B bid.

Bridge Demolition: Design work has been temporarily suspended to assign engineering resources to higher priority tasks, and will resume at a later time. The contract schedule completion date has been extended by 12 months due to a 12-month SAS contract extension. The \$16.2 million decrease in construction costs for the Existing Bridge Demolition contract is due to a re-evaluation of cost escalation rates for the contract.

Contract Issues: None.

Recent TBPOC Actions: None.

Contract Photographs

Jacking operation at location 5



Assembly Permalock Casing (APC) backfill Powell St.



APC installation Powell St.



Assembling APC



Clean-up Powell St. ramp prior to opening



Compacting trench A7 line

Toll Bridge Seismic Retrofit Program

San Francisco-Oakland Bay Bridge (SFOBB) East Span Replacement Project

► OTHER COMPLETED CONTRACTS AND RELATED WORK

Summary Description: Substantial work has already been performed on the SFOBB East Span Replacement project to facilitate construction of the mainline construction contracts.

Other Contracts and Related Work Cost Summary (\$Millions)

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (03/2007)	Cost To Date (02/2007)	Cost Forecast (03/2007)	Variance
a	b	c	d = b + c	E	f	g = f - d
Capital Outlay Support	227.0	-	227.0	209.0	226.0	(1.0)
Right-of-Way and Environmental Mitigation	72.4	-	72.4	38.8	72.4	-
Capital Outlay Construction						-
SAS W2 Foundations	26.4	-	26.4	25.8	26.4	-
YBI/SAS Archaeology	1.1	-	1.1	1.1	1.1	-
YBI - USCG Road Relocation	3.0	-	3.0	2.8	3.0	-
YBI - Substation and Viaduct	11.6	-	11.6	11.3	11.6	-
Oakland Geofill	8.2	-	8.2	8.2	8.2	-
Pile Installation Demonstration Project	9.2	-	9.2	9.2	9.2	-
Existing East Span Retrofit	30.8	-	30.8	30.8	30.8	-
Total Capital Outlay Construction Completed	90.3	-	90.3	89.2	90.3	-
TOTAL	389.7	-	389.7	337.0	388.7	(1.0)

Note: Details may not sum to totals due to rounding effects.

Other Contracts and Related Work Schedule Summary

Project	Actual Project Completion Date
Existing East Span Retrofit	March 1998
Interim Retrofit	July 2000
Pile Installation Demolition Project	December 2000
YBI / SAS Archaeology	January 2003
Oakland Geofill	April 2003
YBI – USCG Road Relocation	June 2004
SAS W2 Foundations	October 2004
YBI Substation and Viaduct	May 2005

Summary Status: Construction has been completed on the above-listed contracts. Caltrans continues to work with various environmental agencies to conduct compliance inspections and monitor and mitigate any environmental impacts from the project.

Contract Issues: None.

Recent TBPOC Actions: None.

Toll Bridge Seismic Retrofit Program

San Francisco-Oakland Bay Bridge (SFOBB) West Approach Replacement Project

Project Description: The SFOBB West Approach Replacement Project will replace the entire west approach structure from 5th Street to the west anchorage of the existing west spans of the SFOBB while maintaining existing traffic lanes for the weekday commute.

SFOBB West Approach Replacement Cost Summary (\$Millions)

Project	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (03/2007)	Cost To Date (02/2007)	Cost Forecast (03/2007)	Variance
a	b	c	d = b + c	e	f	g = f - d
West Approach						
Capital Outlay Support	120.0	-	120.0	89.3	120.0	-
Capital Outlay Construction	309.0	-	309.0	229.4	309.0	-
TOTAL	429.0	-	429.0	318.7	429.0	-

Note: Details may not sum to totals due to rounding effects.

SFOBB West Approach Replacement Schedule Summary

Project	AB 144/SB 66 Project Completion Baseline (07/2005)	Approved Changes (Months)	Project Complete Current Approved Schedule (03/2007)	Contract Complete Schedule Forecast (03/2007)	Schedule Variance (Months)
West Approach	August 2009	-	August 2009	August 2009	-

Project Status: Construction is 77% complete as of March 20, 2007. Seismic retrofit construction is continuing throughout the project. The next major phase is the demolition of the final 3000-foot section of the old I-80 freeway structure from 2nd street (near the Historic Clocktower) to 4th street. The demolition started the weekend of March 30, 2007 and will continue through mid-April 2007. This demolition has a compressed schedule from the as-planned 110 days down to 17 days. This modified work schedule has been implemented in order to minimize impacts and inconvenience to the local residents and businesses. In order to ensure that the community was aware of this upcoming work, an extensive public outreach began well in advance of this work. The public outreach will continue throughout the demolition, which will last through mid-April and include all of the upcoming impacts from future activities. Such future activities include pile installation and falsework erection over the next year which will have significant impacts to the local residents and businesses.

Project Issues:

Issue	Mitigating Action
Pile investigation and testing for the identification of pile anomalies must be completed in a timely manner so as to avoid construction impact.	Work on piles has progressed. Caltrans Construction coordinates closely with Structure Design and METS daily on pile investigation and testing issues, and proactively monitors the efforts. Tracking of the testing effort is done for each individual pile. Team participation in Risk Management meetings has proven to be valuable in addressing this issue.

Contract Issues: None.

Recent TBPOC Actions: None.

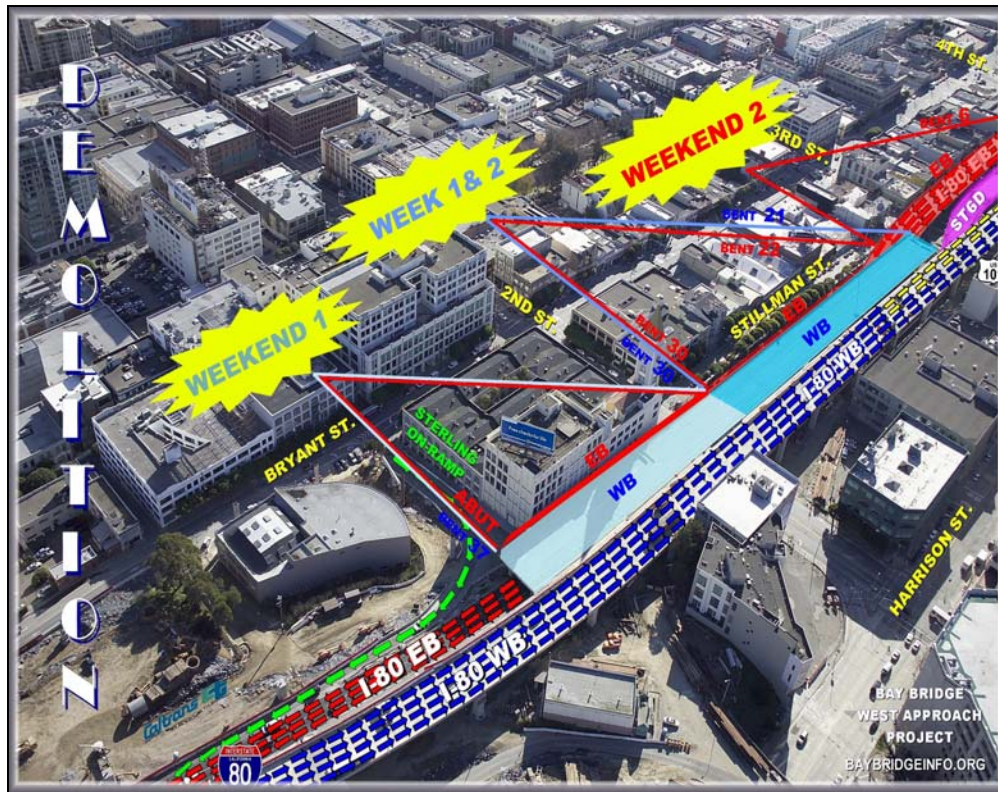
Project Photographs



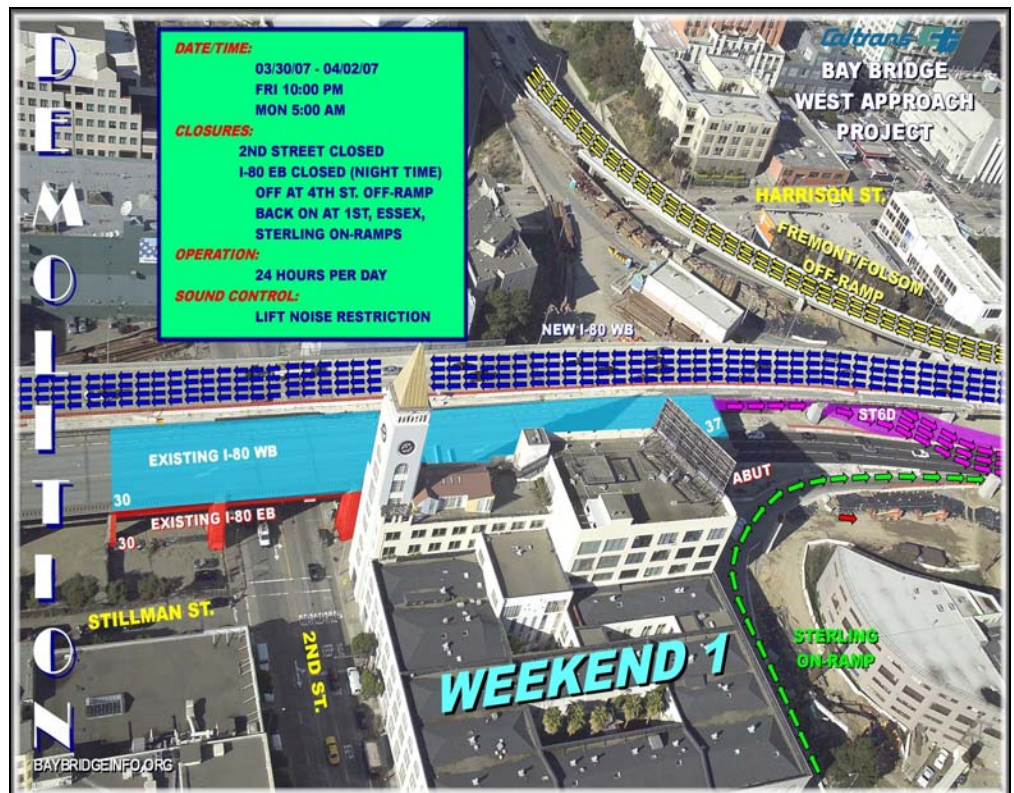
West Approach Project Limits



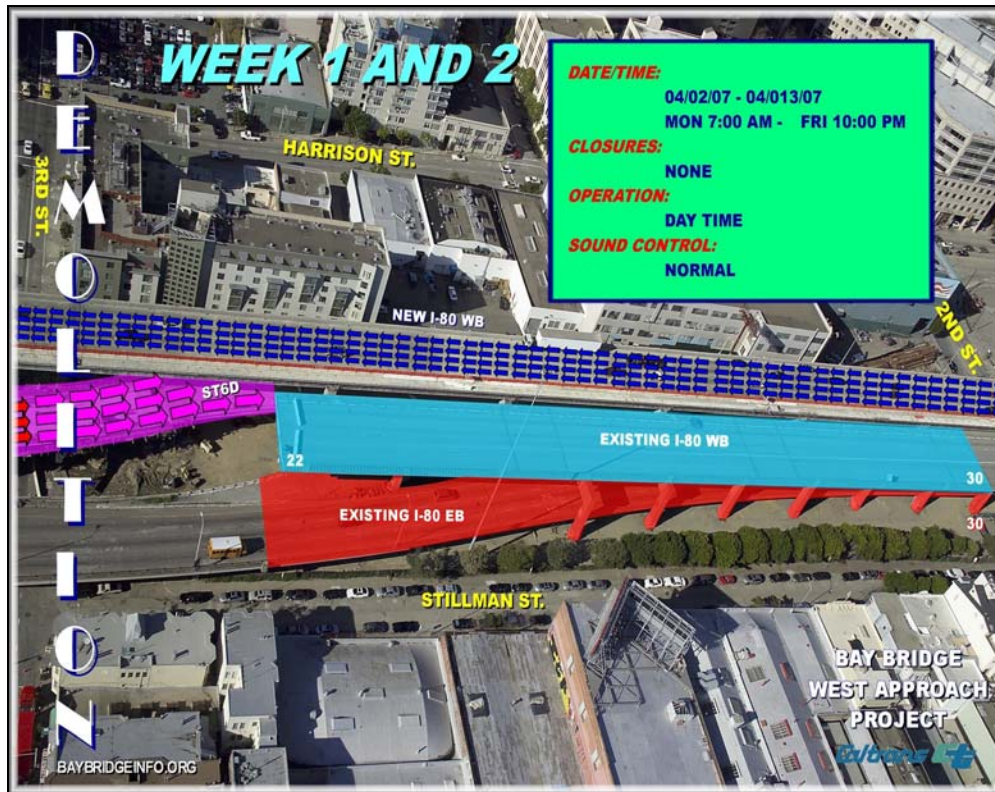
West Approach Progress – ST6D



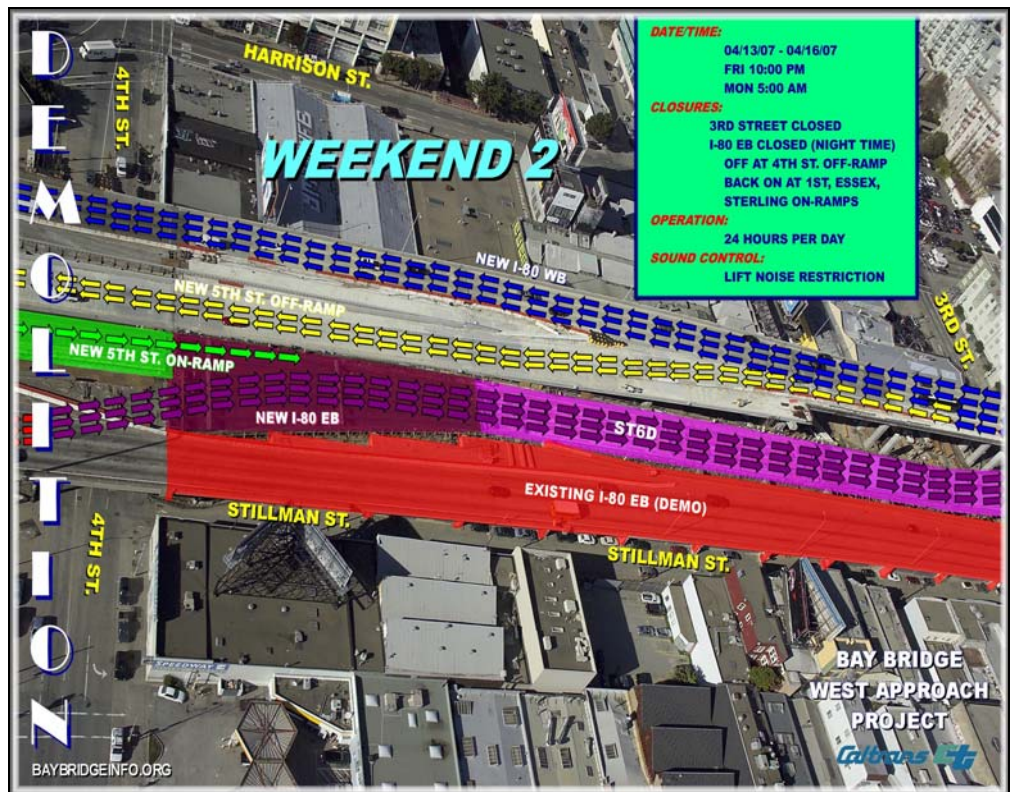
West Approach Demolition Plan



West Approach Demolition Plan – Weekend 1



West Approach Demolition Plan – Week 1 and 2



West Approach Demolition Plan – Weekend 2



March 31st demolition of the old freeway, looking west



Water misters in action mitigating dust during massive demolition



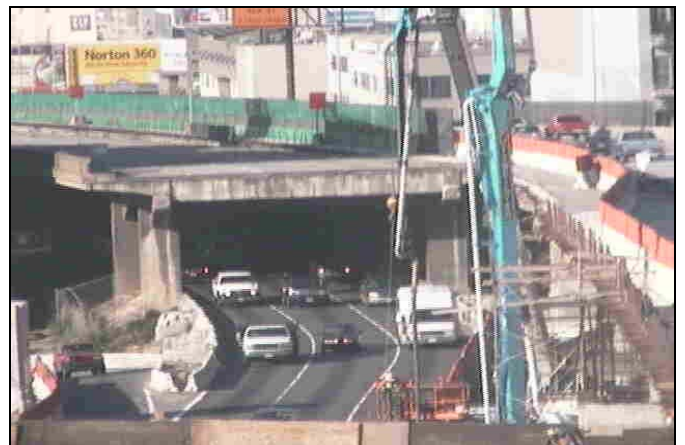
Demolition of the old remaining upper deck commences



Two hammers removing the old upper deck

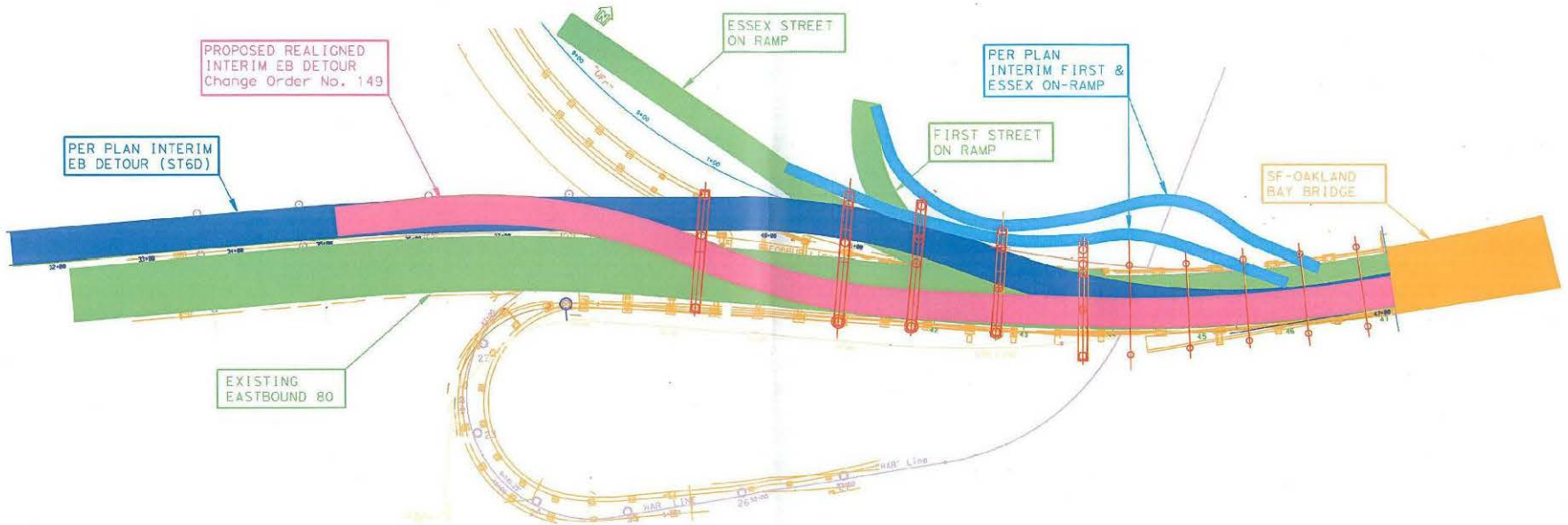


Demolishing old upper deck near Sterling on ramp



Pouring piles for upcoming Frame 7U temporary supports

WEST APPROACH (EA 04-0435V4) REALIGNMENT OF ST6D STAGE 5 DETOUR



Toll Bridge Seismic Retrofit Program

Richmond-San Rafael Bridge (RSRB) Seismic Retrofit Project

Project Description: The Richmond-San Rafael (RSR) Bridge Seismic Retrofit Project strengthened the existing bridge to withstand the effects of a large seismic event. As part of the retrofit work, Caltrans performed work to strengthen the bridge foundations, replace the existing west trestle and the main channel fenders and complete the joint rehabilitation of the bridge deck. (The RM1 work is reported in the RM1 section of the report.)

RSRB Seismic Retrofit Cost Summary (\$Millions)

Project	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (03/2007)	Cost To Date (02/2007)	Cost Forecast (03/2007)	Variance
a	b	c	d = b + c	e	f	g = f - d
RSRB Seismic Retrofit						
Capital Outlay Support	134.0	(7.0)	127.0	125.9	127.0	-
Capital Outlay Construction & Right-of-Way	780.0	(82.0)	698.0	665.6	698.0	-
TOTAL	914.0	(89.0)	825.0	791.5	825.0	-

Note: Details may not sum to totals due to rounding effects.

** The seismic retrofit contract included work to rehabilitate the bridge deck joints. Although the deck joint work was funded from RM1 toll funds, the work is also eligible for Toll Bridge Seismic Retrofit Program funding. In July 2005, BATA rescinded \$16.9 million in RM1 funds for the deck joint work to make additional RM1 funds available for the New Benicia-Martinez Bridge Project. An equivalent amount of seismic funds will be used on the deck joint work, which is included in the budget above.*

RSRB Seismic Retrofit Schedule Summary

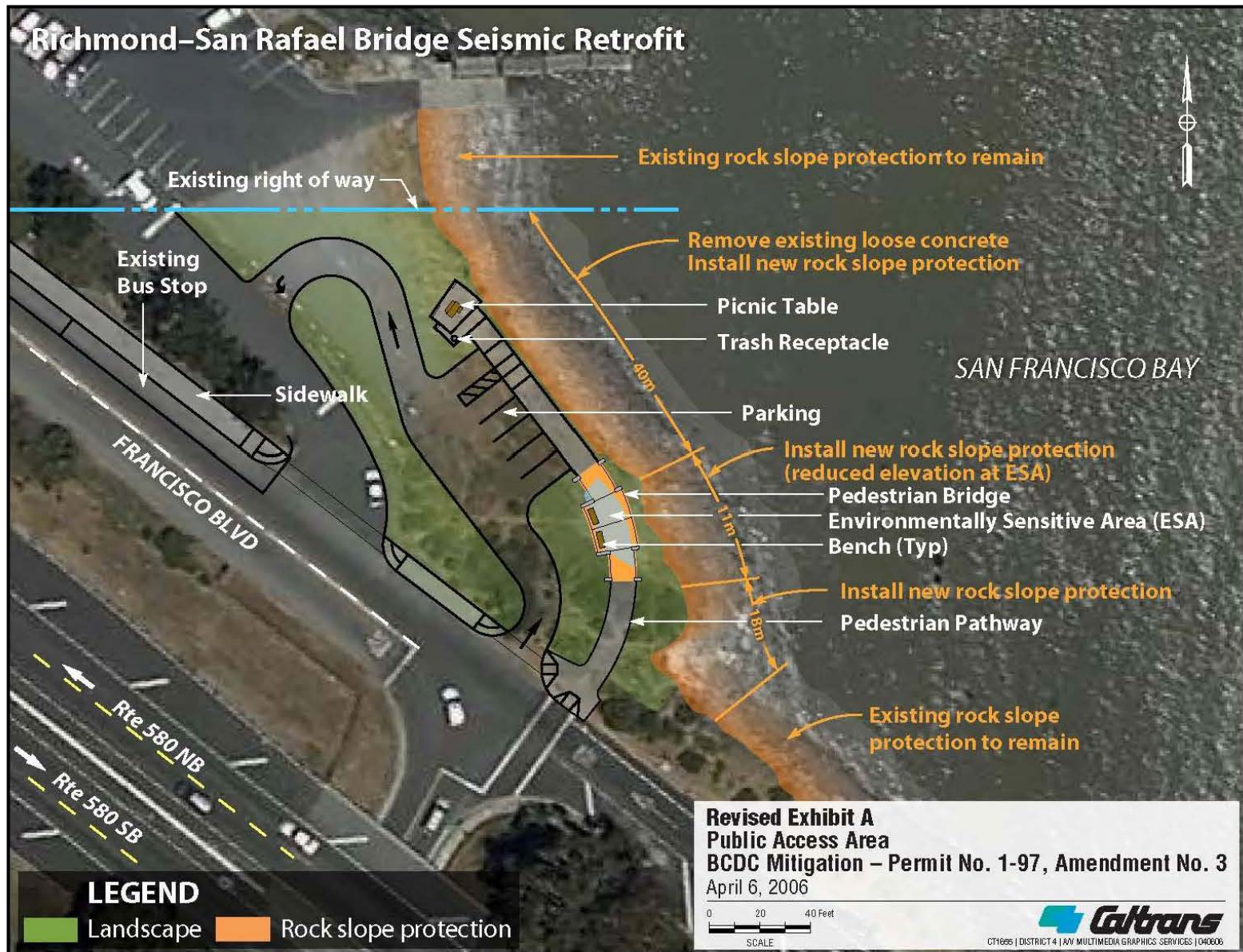
Project	AB 144/SB 66 Project Completion Baseline (07/2005)	Approved Changes (Months)	Project Complete Current Approved Schedule (03/2007)	Contract Complete Schedule Forecast (03/2007)	Schedule Variance (Months)
RSRB Seismic Retrofit	August 2005	-	August 2005	October 2005	2
RSRB Public Access Project	NA	-	May 2007	May 2007	-

Project Status: The retrofit construction contract was completed and accepted on October 28, 2005. Project savings in the amount of \$89 million was transferred to the program contingency in October 2006.

Caltrans has submitted the project plans and specifications for a public access lot on the Marin side of the bridge to comply with a Bay Conservation and Development Commission (BCDC) permit condition. (See the exhibit on page 34.) The contract has been awarded to Ghilloti Bros. Inc. submitting the apparent lowest A+B bid of \$1,005,863.40, as compared with the Engineer's Estimate of \$1,072,157.25. This contract is underway and is scheduled to be completed in summer 2007.

Contract Issues: None.

Recent TBPOC Actions: None.



Toll Bridge Seismic Retrofit Program

Other Completed Seismic Retrofit Projects

Summary Description: Caltrans has already completed the seismic retrofits of the West Spans of the SFOBB, the existing 1958 Carquinez Bridge, the existing Benicia-Martinez Bridge, the San Mateo-Hayward Bridge, and two former toll bridges in Southern California.

Other Completed Seismic Retrofit Projects Cost Summary (\$Millions)

Project	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (03/2007)	Cost To Date (02/2007)	Cost Forecast (03/2007)	Variance
a	b	c	d = b + c	e	F	g = f - d
San Francisco-Oakland Bay Bridge West Span Seismic Retrofit Project	307.9	-	307.9	301.1	307.9	-
Carquinez Bridge Retrofit Project	114.2	-	114.2	114.2	114.2	-
Benicia-Martinez Bridge Retrofit Project	177.8	-	177.8	177.8	177.8	-
San Mateo-Hayward Bridge Retrofit Project	163.5	-	163.5	163.4	163.5	-
Vincent Thomas Bridge Retrofit Project	58.5	-	58.5	58.4	58.5	-
San Diego-Coronado Bridge Retrofit Project	103.5	-	103.5	102.6	103.5	-
TOTAL	925.4	-	925.4	917.5	925.4	-

Note: Details may not sum to totals due to rounding effects. Capital Outlay Support and Capital Outlay have been combined.

Other Completed Seismic Retrofit Projects Schedule Summary

Project	Actual Project Completion Date
Vincent Thomas Bridge Retrofit	May 2000
San Mateo-Hayward Bridge Retrofit	June 2000
Carquinez Bridge Retrofit	January 2002
San Diego-Coronado Bridge Retrofit	June 2002
Benicia-Martinez Bridge Retrofit	August 2002
SFOBB West Span Seismic Retrofit	June 2004

Summary Status: Construction has been completed on the above-listed projects. The Estimate at Completion amounts shown above includes allowances for minor project closeout costs.

Contract Issues: None.

Recent TBPOC Actions: None.

Toll Bridge Seismic Retrofit Program

Other Toll Bridges

Dumbarton and Antioch Bridges

The original design of the Dumbarton and Antioch Bridges were based on design criteria developed after the 1971 San Fernando Earthquake. In the early 1990's, Caltrans determined that these two structures had the seismic resistant features required by the post-1971 codes and were not likely to be vulnerable during a major seismic event. Since that time, Caltrans has pursued an aggressive seismic research program. Based on the results of this program, Caltrans significantly revised its seismic design practice in the late 1990's. Consistent with recommendations by the Caltrans Seismic Advisory Board, Caltrans regularly reassesses the seismic risk and performance of its bridges. Due to the tremendous changes in seismic design practice that have occurred since the design of the Dumbarton and Antioch bridges, a comprehensive assessment of the potential need and scope for seismic retrofit based on current knowledge is advised.

Vulnerability Studies

In late 2004, Caltrans initiated vulnerability studies on the Dumbarton and Antioch bridges. The purpose of these studies was to determine if the bridges would meet current seismic performance standards. The studies were essentially completed in May 2005. They were not complete global analyses, but rather investigations of selected bents modeled as independent structures. The analyses were limited in scope and based on as-built plans and currently available geotechnical information. The superstructure response was not analyzed.

The Dumbarton and Antioch Bridges have many seismic resistant features, and the results of the vulnerability studies indicate that the bridges should perform well in a moderate seismic event. However, during a major seismic event, some potential vulnerabilities (summarized below) become apparent.

Foundation response generally governs performance. The piles may plunge axially and potentially cause permanent footing rotations.

Potentially large foundation displacements and rotations may result in deformations that can't be easily repaired.

The capacity of the ductile columns is greater than those of the bent cap, pile cap, pile and superstructure. As a result, the latter elements may be damaged in a major event, especially if the foundation is retrofitted.

Given the limitations of the studies, there was insufficient evidence to conclusively determine the performance of the bridges during a maximum credible earthquake (MCE). While the Dumbarton and Antioch bridges may meet performance standards, a more comprehensive technical study is necessary to understand the performance of these structures during an MCE event. A study of this level is necessary to accurately determine the structures' responses and to develop any necessary retrofit strategies. A comprehensive geotechnical study using the latest analysis techniques is likely necessary in order to perform this level of analysis.

Sensitivity Analysis

As a follow-up to the Vulnerability Study, a sensitivity analysis was completed on a single representative bent used in the Vulnerability Study (Bent 23 of the Dumbarton Bridge). The goal of the analysis was to determine the structural response associated with uncertainties in the geotechnical data. An envelope of soil conditions (best-case and worst-case scenarios) was used in the analysis.

The results from the sensitivity analysis indicate that the seismic response of the bridge is largely dependant on the soil conditions and that a comprehensive geotechnical investigation is essential for understanding the bridge's performance during a major seismic event. A work plan was developed to assess the extent of geotechnical work needed for a refined seismic analysis and to assess the required performance levels for each structure. Caltrans has completed the value analysis to scope the geotechnical investigation that will be required to complete the strategy. The final report was issued on July 24, 2006.

Cost and Schedule

A preliminary cost estimate, schedule and initial risk analysis have been developed to complete a comprehensive seismic analysis for each bridge. The preliminary estimate and schedule were developed as a baseline that assumed a complete geotechnical and geophysical investigation would be required on each bridge.

Current Progress

In June 2006, BATA approved \$17.8 million in funding to proceed with the comprehensive seismic analysis of the bridges. By September 2006, BATA entered into a contract with Earth Mechanics to conduct geotechnical and geophysical investigations, which have been on-going since December 6, 2006.

At the Dumbarton Bridge, all land and marine drilling have been completed.

At the Antioch Bridge, 28 of the 30 on-land drilling have been completed and also the Marine drilling operations have been completed.

A bathymetric survey (the measurement of the depth from the water surface to the mudline) has been completed at both bridges. This survey will provide the topography of the bay mud in the vicinity of each bridge.

Caltrans is currently reviewing the new geotechnical data, as well as existing geotechnical data. Caltrans began the structural analysis to complete the seismic retrofit strategies for each bridge. Caltrans have also been working with the Seismic Advisory Peer review panel on the status of the project.



PROJECT / CONTRACT REPORTS

Regional Measure 1 Program

New Benicia-Martinez Bridge Project Summary

- New Benicia-Martinez Bridge Contract
- Other Contracts and Related Project Activities

New Carquinez Bridge Project

Richmond-San Rafael Bridge Deck Overlay Project

Interstate 880 / State Route 92 Interchange Reconstruction

Other Completed Regional Measure 1 Projects

- San Mateo-Hayward Bridge Widening Project
- Richmond Parkway Project
- Bayfront Expressway Widening Project
- Richmond-San Rafael Bridge Trestle, Fender, and Deck Joint Rehabilitation Project

Regional Measure 1 Program

New Benicia-Martinez Bridge Project Summary

Project Description: The new Benicia-Martinez Bridge project constructs a new parallel bridge just east of the existing bridge. The project will include reconstructed interchanges to the north and south of the bridges and a new toll plaza and administration building in Martinez.

New Benicia-Martinez Bridge Project Cost Summary (\$Millions)

Contract	BATA Budget (07/2005)	Approved Changes	Current Approved Budget (03/2007)	Cost To Date (02/2007)	Cost Forecast (03/2007)	Variance
a	B	c	d = b + c	e	f	g = f - d
Capital Outlay Support	157.1	24.8	181.8	165.7	181.8	-
Right-of-Way and Others	20.4	(0.1)	20.3	12.3	20.3	-
Capital Outlay						-
New Bridge	672.0	100.9	772.9	724.0	772.9	-
I-680/I-780 Interchange Replacement	76.3	22.5	98.8	83.7	98.8	-
I-680/Marina Vista Interchange Reconstruction	51.5	8.1	59.6	54.7	59.6	-
New Toll Plaza	24.3	2.0	26.3	22.8	26.3	-
Existing Bridge & Interchange Modifications	17.2	10.9	28.1	-	28.1	-
Other	20.3	(1.3)	19.0	15.2	19.0	-
Project Reserve	20.8	35.3	56.2	-	56.2	-
TOTAL	1,059.9	203.1	1,263.0	1,078.4	1,263.0	-

Note: Details may not sum to totals due to rounding effects.

* The budget and estimate at completion includes approximately \$33 million in non-toll bridge funds (Proposition 192 and HOPP).

New Benicia-Martinez Bridge Project Schedule Summary

Contract	BATA Contract Completion Baseline (07/2005)	Approved Changes (Months)	Contract Complete Current Approved Schedule (03/2007)	Contract Complete Schedule Forecast (03/2007)	Schedule Variance (Months)
I-680/Marina Vista Interchange Reconstruction	March 2006	1	April 2006	April 2006	-
New Toll Plaza	June 2006	-	June 2006	February 2007	8
New Benicia-Martinez Bridge	December 2007	-	December 2007	December 2007	-
I-680/I-780 Interchange Replacement	December 2007	-	December 2007	February 2008	2
Open to Traffic	December 2007	-	December 2007	December 2007	-
Existing Bridge & Interchange Modifications	December 2009	-	December 2009	December 2009	-

*See page 45 for an explanation of change in schedule forecast.

Project Status: All major construction projects necessary to open the bridge are currently in construction. Numerous foundation and superstructure issues have significantly delayed the new bridge contract. See the following contract detail pages for more information. Note that the remaining expenditures required on the “Right-of-Way and Others” category represent environmental permitting and mitigation.

Project Issues: None.

Recent TBPOC Actions: See the following contract detail pages for more information.

Project Photographs



Aerial Photo of the Benicia-Martinez Bridges



New Benicia-Martinez Progress



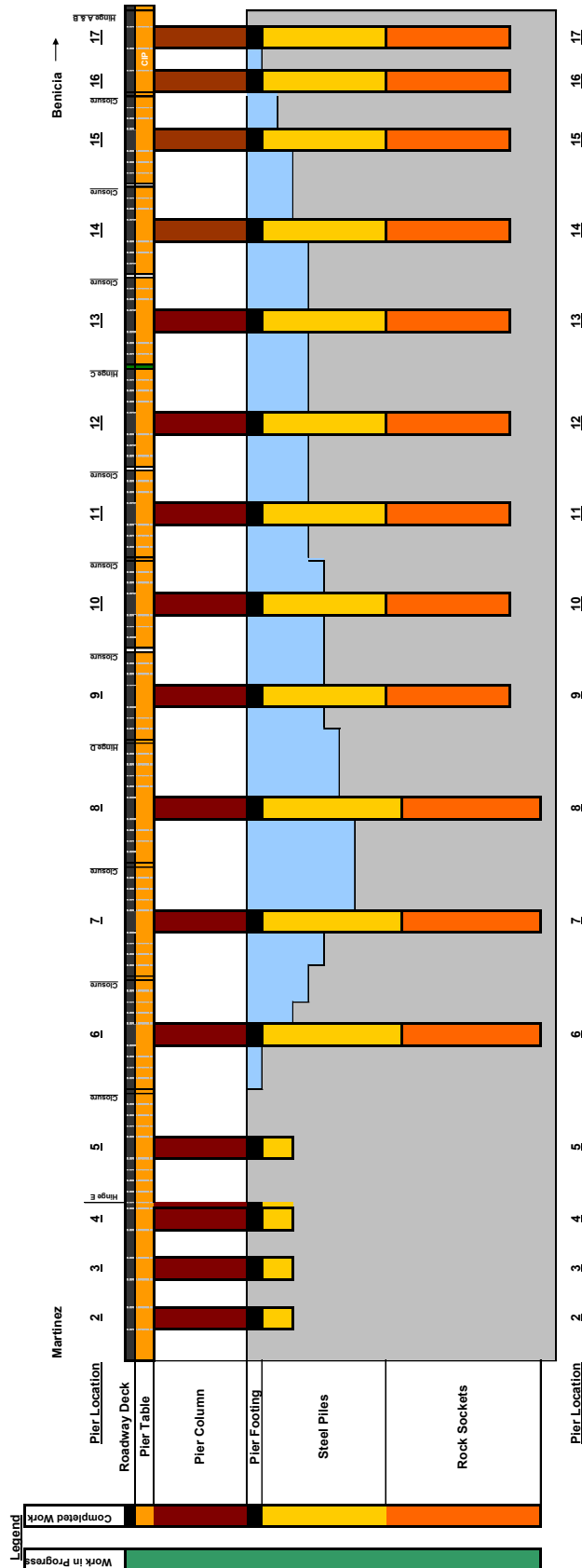
Operations Building & Courtyard Looking West



Toll Plaza Administration Building

Project Photographs Cont'd.*Aerial Photo of the Benicia-Martinez Bridges**Barrier Rail Construction at New Bridge Photo**Barrier Rail Construction at New Bridge Photo**Benicia-Martinez Progress Photo**Benicia-Martinez Progress Photo**Benicia-Martinez Progress Photo*

New Benicia-Martinez Bridge Progress Diagram
March 2007

**Notes:**

1. Abutment 1 and Piers 2 through 5 are on land and have 66 piles. All piles, footings, columns and pier tables are complete. The superstructure is complete from Abutment 1 to Pier 4.
2. Piers 6 through 17 are located in the water and have 8 to 9 piles and rock sockets each - a total of 99. All 99 piles have been driven to their required depth and all 99 rock sockets have been installed.
3. Piers 6 through 17 have two-part footings. Piers 6, 16 and 17 have a cast-in-place (CIP) upper section and a cast-in-place (CIP) lower section, which are lowered onto the piles. All three footings are complete. Piers 7 through 15 have a precast lower section that is set on the piles and a cast-in-place (CIP) upper section. All nine precast footings have been set and all CIP footings are complete.
4. All Stage 2 footings have been poured and stressed.
5. All pier tables are complete as of the end of May 2006.
6. Piers 4 through 15 have 344 cast-in-place cantilevered superstructure segments. All of the three-hundred and forty-four (344) segments (100%) have been cast to-date. Hinges A, B, E and D are completed and Hinge C is still in progress. Five span closures (5, 6, 7, 10 and 15) have been poured. Four span closures remain to be done.
7. The cast-in-place on falseworks superstructure south of Pier 4 is substantially complete, except for the bridge deck repair work, which are still to be done. The structure north of Pier 15 is substantially complete, including the lower and the upper hinge seats at Hinges A and B.

Regional Measure 1 Program

New Benicia-Martinez Bridge Project

► NEW BENICIA-MARTINEZ BRIDGE CONTRACT

Contract Description: The new bridge contract constructs a new cast-in-place segmentally constructed reinforced concrete bridge just east of the existing bridge. The new bridge will carry five lanes of eastbound I-680 traffic towards Benicia.

New Benicia-Martinez Bridge Cost Summary (\$Millions)

Contract	BATA Budget (07/2005)	Approved Changes	Current Approved Budget (03/2007)	Cost To Date (02/2007)	Cost Forecast (03/2007)	Variance
a	b	c	d = b + c	e	f	g = f - d
New Benicia-Martinez Bridge						
Capital Outlay Support	84.9	7.7	92.6	84.0	92.6	-
Capital Outlay Construction	672.0	100.9	772.9	724.0	772.9	-
TOTAL	756.9	108.6	865.5	808.0	865.5	-

Note: Details may not sum to totals due to rounding effects.

New Benicia-Martinez Bridge Schedule Summary

Contract	BATA Contract Completion Baseline (07/2005)	Approved Changes (Months)	Contract Complete Current Approved Schedule (03/2007)	Contract Complete Schedule Forecast (03/2007)	Schedule Variance (Months)
New Benicia-Martinez Bridge	December 2007	-	December 2007	December 2007	-

Contract Status: The contract is 94 % complete based on the current revised schedule. All substructure and superstructure works have been completed. The final closure on the job was poured on December 20, 2006. Significant electrical work activities, including installation of power and communication conduits/ junction boxes in frames 1 & 2 barriers, installation of cable trays and lighting fixtures in girder box frames 2 & 3, installation of traffic equipment at the top deck extended platforms, installation of fiber optic, ISDN, boxes and conduits inside the box girder, and seismic monitoring boxes/conduits at spans 5 thru 16, were completed during the period. Work on the Span 6 repair continued with scheduled concrete pour back in early March 2007 to be followed by span tendons stressing. The span 6 platform is expected to be lowered after the pour and will be used for the Span 11 repair. In the meantime, the temporary access platform was hoisted at Span 9 for closure repair on February 26, 2007, and the demolition of the soffit began on March 1, 2007. Miscellaneous work, such as punchlist work, exterior finish, grinding, profilograph, prep work for grouting spans and continuity tendons and installation of ship ladders for the fixed platforms, installation of bumpers and movable maintenance travelers, have either been completed during this period or continuing. The critical path includes the closure pour repairs at Span 6 & 11 and the completion of the Seismic Monitoring System.

Consistent with BATA's Fastrak strategic plan, plans are progressing for the implementation of open road tolling (ORT) at the toll plaza, which involves the demolition of the toll booths. The booth demolition has been completed. The roadway section between toll booth 9 and toll booth 17 has been removed and replaced. Final AC operation at the toll plaza canopy area ended on March 16, 2007. AC surface is ready for BATA's contractor (ACS) to place the loop detectors at the ORT lanes and the HOV lane. Ninety percent of the conduits for the new CMS sign have been placed. Approximately, sixty percent of all the

electrical work has been completed. Work on installing and testing the ORT equipment is expected to start in April 2007. ORT equipment is expected to be completed in August 2007.

Contract Issues:

Issue	Mitigating Action
During stressing of steel span tendons, tie the bridge piers at spans 6, 9, and 11, Caltrans discovered that some concrete had delaminated at the bottom of several of the segments.	To repair the delamination, Caltrans has directed the contractor to repair the affected delaminated concrete at the closure soffits and issued CCO # 166 for these tasks. Closure repair work at Span 6 is almost complete, while work has just started on Span 9. These repairs should not impact the opening date of the bridge and will be funded from existing contract contingency funds.

Recent TBPOC Actions: None.

Contract Photographs

New Bridge Progress Photo



New Bridge Progress Photo



New Bridge Progress Photo



New Bridge Progress Photo

Regional Measure 1 Program

New Benicia-Martinez Bridge Project Summary

► OTHER CONTRACTS AND RELATED PROJECT ACTIVITIES

Contract Description: Contracts related to the new Benicia-Martinez Bridge project involve the construction of a new toll plaza south of the new bridge in Contra Costa County with 17 toll booths, including two high-occupancy vehicle (HOV) bypass lanes, and the reconstruction of the I-680/Marina Vista Road and I-680/I-780 interchanges.

Other Contracts and Related Activities Cost Summary (\$Millions)

Contract	BATA Budget (07/2005)	Approved Changes	Current Approved Budget (03/2007)	Cost To Date (02/2007)	Cost Forecast (03/2007)	Variance
a	b	c	d = b + c	e	f	g = f - d
Capital Outlay Support	72.2	17.0	89.2	81.7	89.2	-
Right-of-Way and Environmental Mitigation	20.4	(0.1)	20.3	12.3	20.3	-
Capital Outlay Construction						-
I-680/I-780 Interchange Replacement	76.3	22.5	98.8	83.7	98.8	-
I-680/Marina Vista Interchange Reconstruction	51.5	8.1	59.6	54.7	59.6	-
New Toll Plaza	24.3	2.0	26.3	22.8	26.3	-
Existing Bridge & Interchange Modifications	17.2	10.9	28.1	-	28.1	-
Others	20.3	(1.3)	19.0	15.2	19.0	-
Total Capital Outlay Construction	189.6	42.2	231.8	176.4	231.8	-
TOTAL	282.2	59.1	341.3	270.4	341.3	-

Note: Details may not sum to totals due to rounding effects.

Other Contracts and Related Activities Schedule Summary

Contract	BATA Contract Completion Baseline (07/2005)	Approved Changes (Months)	Contract Complete Current Approved Schedule (03/2007)	Contract Complete Schedule Forecast (03/2007)	Schedule Variance (Months)
I-680/Marina Vista Interchange Reconstruction	March 2006	1	April 2006	April 2006	-
New Toll Plaza	June 2006	-	June 2006	May 2007	11
I-680/I-780 Interchange Replacement	December 2007	-	December 2007	February 2008	2
Existing Bridge & Interchange Modifications	December 2009	-	December 2009	December 2009	-

Contract Status:

Toll Plaza and Administration Building: The contract is 99% complete based on contractor payment. The Contractor has completed all on the Operations Building, Toll Plaza and Courtyard. Once the Plant Establishment Period is up, the contract can be accepted. The Resident Engineer estimates accepting the contract by May 15, 2007. A number of notices of potential claims that have been filed by the Contractor remain to be resolved, but this will have no impact on the bridge Open-to-Traffic date.

I-680/I-780 Interchange: The contract remains approximately 96% complete based on the current revised schedule. To-date, all of the bridge structures are substantially complete. Final electrical work for the new Benicia-Martinez Bridge and the interchange will not be completed until after the new bridge is complete.

I-680/Marina Vista Interchange: The contract is 100% complete as of May 12, 2006, and has been accepted by Caltrans. Caltrans and the contractor are currently resolving the final payment for work on the contract. It is anticipated that a final estimate will be run in April and all issues resolved.

Wetland Mitigation: The contract is 100% complete. The Contract Completion Acceptance (CCA) was submitted to Caltrans Headquarters for their approval on March 3, 2006. The Proposed Final Estimate (PFE) has been reviewed and accepted by the Contractor.

Recent TBPOC Actions: During the February 2007 TBPOC meeting, the TBPOC approved \$2M for the 680/780 I/C CCO # 135, Impacts on Inefficiencies and TRO, which is part of the global escalation settlement with the Contractor.

Regional Measure 1 Program

New Carquinez Bridge Project

Project Description: The new Carquinez Bridge project involves constructing a new suspension bridge west of the existing bridges with four westbound lanes and a bicycle/pedestrian lane and demolishing the existing 1927 bridge.

New Carquinez Bridge Cost Summary (\$Millions)

Contract	BATA Budget (07/2005)	Approved Changes	Current Approved Budget (03/2007)	Cost To Date (02/2007)	Cost Forecast (03/2007)	Variance
a	b	c	d = b + c	e	f	g = f - d
Capital Outlay Support	124.4	(1.1)	123.3	118.7	123.2	(0.1)
Capital Outlay Construction						-
Replacement Bridge	253.3	4.0	257.3	256.0	257.3	-
South Interchange Reconstruction	73.9	-	73.9	71.9	73.9	-
Existing 1927 Bridge Demolition	35.2	-	35.2	23.6	35.2	-
Other	29.3	(0.7)	28.6	25.2	28.4	(0.2)
Project Reserve	12.1	(2.2)	9.9	-	10.2	0.3
TOTAL	528.2	-	528.2	495.4	528.2	-

Note: Details may not sum to totals due to rounding effects.

New Carquinez Bridge Schedule Summary

Contract	BATA Contract Completion Baseline (07/2005)	Approved Changes (Months)	Contract Complete Current Approved Schedule (03/2007)	Contract Complete Schedule Forecast (03/2007)	Schedule Variance (Months)
New Carquinez Bridge	December 2003*	-	December 2003*	December 2003*	-
1927 Carquinez Bridge Demolition	September 2007	-	December 2007**	March 2008	3
Landscaping	August 2011	-	August 2011	August 2011	-

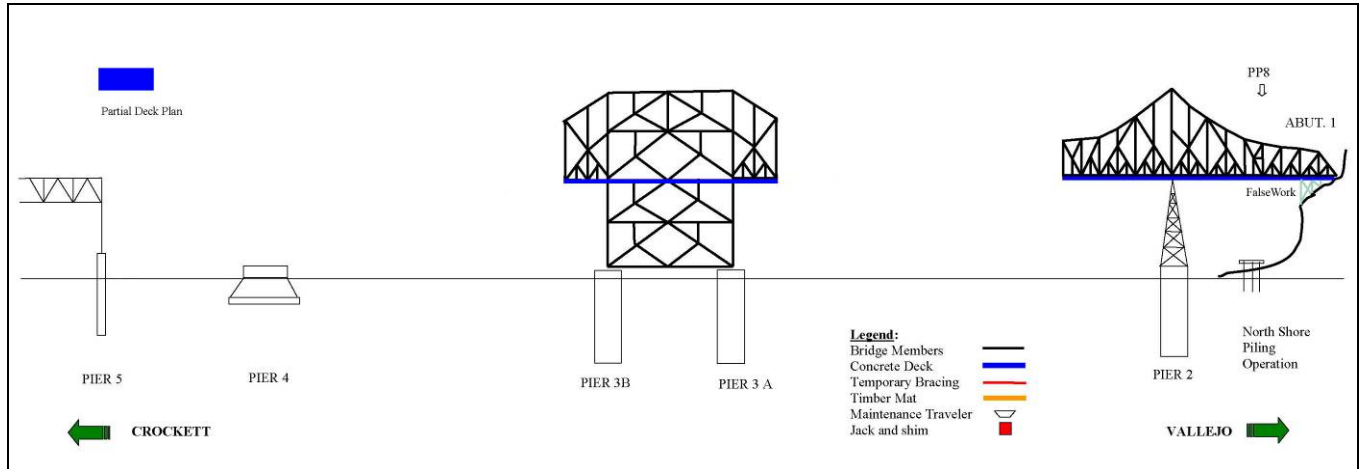
* The date shown is for the opening of the bridge to traffic.

** Based on Current CPM update as of December 2006.

Project Status: The new replacement bridge and all its approaches have been completed and opened to traffic in November 2003. The demolition contract to remove the 1927 bridge, which was awarded in April 2005, is approximately 64% complete based on schedule. However, based on payment, this contract is 78% complete in that the greatest pay items involved the 1958 bridge approach deck replacement, which has been completed in November 2005. To-date, demolition of Units 1, 2, 3 and 7 of the 1927 bridge have been completed. Demolition work continued at Units 4 and 6, with 4 panel points remaining for both Units. Stairs were installed at Unit 9 to access temporary supports at panel points 6. Pile caps at panel point 8 have been completed and preparing to install posts. The demolition of the 1927 bridge approach structure continued with the removal of the steel girders, which was completed within this report period. The removal of the concrete deck portion of the approach structure was completed and reported in last report. Removal of columns has just been started on January 23, 2007.

Project Issues:

Issue	Mitigating Action
<ul style="list-style-type: none"> - Utility conflict with the alignment of bike path. - Pier 4 removal. - Installation of water line on the 1958 Bridge. - Conflicting work with UPRR which delay removal of span 13 and Pier 5. 	Delays can not be ascertained at this point, but the RE estimated completion date would be in March 2008.

Project Photographs

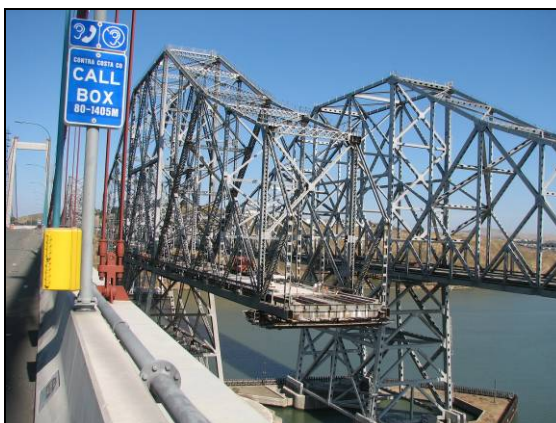
1927 Carquinez Bridge Demolition Progress Status as of January 31, 2007



Carquinez Bridge Progress Photo



Carquinez Bridge Progress Photo

*Carquinez Bridge Progress Photo**Carquinez Bridge Progress Photo**Carquinez Bridge Progress Photo**Carquinez Bridge Progress Photo**Carquinez Bridge Progress Photo**Carquinez Bridge Progress Photo*

Regional Measure 1 Program

Interstate 880/State Route 92 Interchange Reconstruction Project

Project Description: Modify the existing cloverleaf interchange to increase capacity and improve safety and traffic operations.

Interstate 880/State Route 92 Interchange Cost Summary (\$Millions)

Contract	BATA Budget (07/2005)	Approved Changes	Current Approved Budget (03/2007)	Cost To Date (02/2007)	Cost Forecast (03/2007)	Variance
a	B	c	d = b + c	e	f	g = f - d
I-880/SR-92 Interchange Improvement						
Capital Outlay Support	28.8	-	28.8	30.9	51.7	22.9
Capital Outlay Construction	94.8	-	94.8	-	122.5	27.7
Capital Outlay Right-of-Way	9.9	-	9.9	8.3	12.4	2.5
Project Reserve	0.3	-	0.3	-	9.7	9.4
TOTAL	133.8	-	133.8	39.2	196.3	62.5

Note: Details may not sum to totals due to rounding effects. \$9.6 million in ACTA funds included under Capital Outlay Construction. \$3.7 million included in Capital Outlay Construction for separate landscape contract.

Interstate 880/State Route 92 Interchange Schedule Summary

Project	BATA Project Completion Baseline (07/2005)	Approved Changes (Months)	Project Complete Current Approved Schedule (03/2007)	Contract Complete Schedule Forecast (03/2007)	Schedule Variance (Months)
I-880/SR-92 Interchange Reconstruction	December 2010	-	December 2010	June 2011	7

Project Status: Caltrans risk advertised the contract on January 8, 2007. A stipend was issued as Addendum No. 1 to encourage bidders. The Project right-of-way was certified on March 30, 2007. In order to certify the right of way, the railroad work was deleted from the contract through Addendum No. 2. Army Corps Permit expired in March 2007. The permit renewal is pending. Due to requests from several prime contractors, Addendum No. 2 also extended the bid opening date to May 23, 2007, at which time BATA will take budget update actions as needed. Begin construction target date is late July 2007. Construction duration is expected to be four (4) years.

Project Issues:

Issue	Mitigating Action
Bids received on the I-238 Widening contract indicates that the construction estimate may be higher than currently forecasted, from \$196.3 million to \$216.8 million.	Caltrans and BATA will perform a further in-depth review of the estimated costs of major contract items.

Project Photographs:

*Interstate 880/State Route 92 Interchange
BEFORE*



*Interstate 880/State Route 92 Interchange
AFTER*

Regional Measure 1 Program

Other Completed Regional Measure 1 (RM1) Projects

Summary Description: Other completed Regional Measure 1 projects are the following: (a) Widen the San Mateo-Hayward Bridge along its low-trestle section and its eastern approach; (b) Widen the Bayfront Expressway (SR 84) from the Dumbarton Bridge to the U.S. 101/Marsh Road interchange; (c) Construct an eastern approach (Richmond Parkway) between the Richmond-San Rafael Bridge and Interstate 80 near Pinole; (d) Modify the U.S. 101/University Avenue interchange; (e) Richmond-San Rafael Bridge Trestle, Fender and Deck Joint Rehabilitation Project; and (f) Richmond-San Rafael Bridge Deck Overlay Project.

Other Completed RM1 Projects Cost Summary (\$Millions)

Contract	BATA Budget (07/2005)	Approved Changes	Current Approved Budget (03/2007)	Cost To Date (02/2007)	Cost Forecast (03/2007)	Variance
a	B	c	d = b + c	e	f	g = f - d
San Mateo-Hayward Bridge Widening Project	217.8	-	217.8	208.7	211.9	(5.9)
Bayfront Expressway Widening Project	36.1	-	36.1	33.2	36.1	-
Richmond Parkway Project	5.9	-	5.9	3.9	5.9	-
U.S. 101/University Interchange	3.8	-	3.8	3.7	3.8	-
RSR Trestle, Fender, and Joint Rehabilitation	102.1	-	102.1	79.9	97.1	(5.0)
RSR Deck Overlay	25.0	-	25.0	18.9	25.0	-
TOTAL	390.7	-	390.7	348.3	379.8	(10.9)

Schedule Summary

Project	Actual Project Completion Date
Richmond Parkway Project	May 2001
San Mateo-Hayward Bridge Widening Project	February 2003
Bayfront Expressway Widening Project	January 2004
U.S. 101/University Interchange	April 2004
Richmond-San Rafael Bridge Trestle, Fender and Deck Joint Rehabilitation	August 2005
RSR Deck Overlay	December 2006

Project Status: Construction has been completed on the above listed contracts.

Project Issues: None.



San Mateo-Hayward Bridge Widening Project completed in 2002

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APPENDICES

- A** Toll Bridge Seismic Retrofit Program:
San Francisco-Oakland Bay Bridge (SFOBB) East Span Replacement Project Cost
Detail
- B** Toll Bridge Seismic Retrofit Program Cost Detail
- C** Toll Bridge Seismic Retrofit Program Summary Schedule
- D** Regional Measure 1 Program Cost Detail
- E** Regional Measure 1 Program Summary Schedule

** Forecasts for the Monthly Reports are generally updated on a quarterly basis in conjunction with Risk Analysis assessments for the TBSRP Projects and the TBSRP Quarterly Reports.*

Appendix A: Toll Bridge Seismic Retrofit Program (\$Millions)

San Francisco-Oakland Bay Bridge (SFOBB) East Span Replacement Project Cost Detail

Contract	EA Number	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (03/2007)	Cost To Date (02/2007)	Cost Forecast (03/2007)	At-Completion Variance
a	b	c	d	e = c + d	f	g	h = g - e
San Francisco-Oakland Bay Bridge East Span Replacement Project							
East Span - Skyway	01202X						
Capital Outlay Support		197.0	-	197.0	158.0	197.0	-
Capital Outlay Construction		1,293.0	-	1,293.0	1,119.6	1,293.0	-
Total		1,490.0	-	1,490.0	1,277.6	1,490.0	-
East Span - SAS E2/T1 Foundations	0120EX						
Capital Outlay Support		52.5	-	52.5	19.1	52.5	-
Capital Outlay Construction		313.5	-	313.5	199.3	313.5	-
Total		366.0	-	366.0	218.4	366.0	-
East Span - SAS Superstructure	0120FX						
Capital Outlay Support		214.6	-	214.6	31.5	214.6	-
Capital Outlay Construction		1,753.7	-	1,753.7	256.2	1,767.4	13.7
Total		1,968.3	-	1,968.3	287.7	1,982.0	13.7
SAS W2 Foundations	0120CX						
Capital Outlay Support		10.0	-	10.0	9.2	10.0	-
Capital Outlay Construction		26.4	-	26.4	25.8	26.4	-
Total		36.4	-	36.4	35.0	36.4	-
YBI South/South Detour	0120RX						
Capital Outlay Support		29.5	-	29.5	19.7	29.5	-
Capital Outlay Construction		131.9	-	131.9	44.1	334.4	202.5
Total		161.4	-	161.4	63.8	363.9	202.5
YBI Transition Structures	0120PX						
Capital Outlay Support		78.7	-	78.7	12.8	78.7	-
Capital Outlay Construction		299.3	-	299.3	-	276.1	(23.2)
Total		378.0	-	378.0	12.8	354.8	(23.2)
Oakland Touchdown (see notes below)	01204X						
Capital Outlay Support		74.4	-	74.4	23.6	92.1	17.7
Capital Outlay Construction		283.8	-	283.8	-	302.5	18.7
Total		358.2	-	358.2	23.6	394.6	36.4
* OTD Submarine Cable	0120K4						
Capital Outlay Support					0.4	3.0	
Capital Outlay Construction					-	9.6*	
Total					0.4	3.0	
* OTD No. 1 (Westbound)	0120L4						
Capital Outlay Support					3.0	49.9	
Capital Outlay Construction					-	226.5	
Total					3.0	276.4	
* OTD No. 2 (Eastbound)	0120M4						
Capital Outlay Support					0.2	15.8	
Capital Outlay Construction					-	62.0	
Total					0.2	77.8	
* OTD Electrical Systems	0120N4						
Capital Outlay Support					0.1	1.4	
Capital Outlay Construction					-	4.4	
Total					0.1	5.8	

Notes: Oakland Touchdown Cost-to-Date and Cost Forecast includes prior-to-split Capital Outlay Support Costs.

* - Current contract allotment to install two submarine electrical cables is \$11.5 million. Additional non-program funding to support this allocation beyond the 9.6 million of available program funds has been made available by the Treasure Island Development Authority.

Note: Details may not sum to totals due to rounding effects.

Appendix A: Toll Bridge Seismic Retrofit Program (\$Millions)

San Francisco-Oakland Bay Bridge (SFOBB) East Span Replacement Project Cost Detail (Cont'd.)

Contract	EA Number	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (03/2007)	Cost To Date (02/2007)	Cost Forecast (03/2007)	At-Completion Variance
a	b	c	d	e = c + d	f	g	h = g - e
Existing Bridge Demolition	01209X						
Capital Outlay Support		79.7	-	79.7	0.3	79.7	-
Capital Outlay Construction		239.2	-	239.2	-	222.0	(17.2)
Total		318.9	-	318.9	0.3	301.7	(17.2)
YBI/SAS Archeology	01207X						
Capital Outlay Support		1.1	-	1.1	1.1	1.1	-
Capital Outlay Construction		1.1	-	1.1	1.1	1.1	-
Total		2.2	-	2.2	2.2	2.2	-
YBI - USCG Road Relocation	0120QX						
Capital Outlay Support		3.0	-	3.0	2.7	3.0	-
Capital Outlay Construction		3.0	-	3.0	2.8	3.0	-
Total		6.0	-	6.0	5.5	6.0	-
YBI - Substation and Viaduct	0120GX						
Capital Outlay Support		6.5	-	6.5	6.4	6.5	-
Capital Outlay Construction		11.6	-	11.6	11.3	11.6	-
Total		18.1	-	18.1	17.7	18.1	-
Oakland Geofill	01205X						
Capital Outlay Support		2.5	-	2.5	2.5	2.5	-
Capital Outlay Construction		8.2	-	8.2	8.2	8.2	-
Total		10.7	-	10.7	10.7	10.7	-
Pile Installation Demonstration Project	01208X						
Capital Outlay Support		1.8	-	1.8	1.8	1.8	-
Capital Outlay Construction		9.2	-	9.2	9.2	9.2	-
Total		11.0	-	11.0	11.0	11.0	-
Stormwater Treatment Measures	0120JX						
Capital Outlay Support		6.0	-	6.0	6.2	7.0	1.0
Capital Outlay Construction		15.0	-	15.0	8.2	15.0	-
Total		21.0	-	21.0	14.4	22.0	1.0
Right-of-Way and Environmental Mitigation	0120X9						
Capital Outlay Support		-	-	-	-	-	-
Capital Outlay & Right-of-Way		72.4	-	72.4	38.8	72.4	-
Total		72.4	-	72.4	38.8	72.4	-
	04343X & 04300X						
Sunk Cost - Existing East Span Retrofit							
Capital Outlay Support		39.5	-	39.5	39.5	39.5	-
Capital Outlay Construction		30.8	-	30.8	30.8	30.8	-
Total		70.3	-	70.3	70.3	70.3	-
Other Capital Outlay Support							
Environmental Phase		97.7	-	97.7	97.7	97.7	-
Pre-Split Project Expenditures		44.9	-	44.9	44.9	44.9	-
Non-project Specific Costs		20.0	-	20.0	3.2	19.0	(1.0)
Total		162.6	-	162.6	145.8	161.6	(1.0)
Subtotal Capital Outlay Support		959.4	-	959.4	480.2	977.1	17.7
Subtotal Capital Outlay Construction		4,492.1	-	4,492.1	1,755.4	4,686.6	194.5
Other Budgeted Capital		35.1	-	35.1	0.6	11.0	(24.1)
Total SFOBB East Span Replacement Project		5,486.6	-	5,486.6	2,236.2	5,674.7	188.1

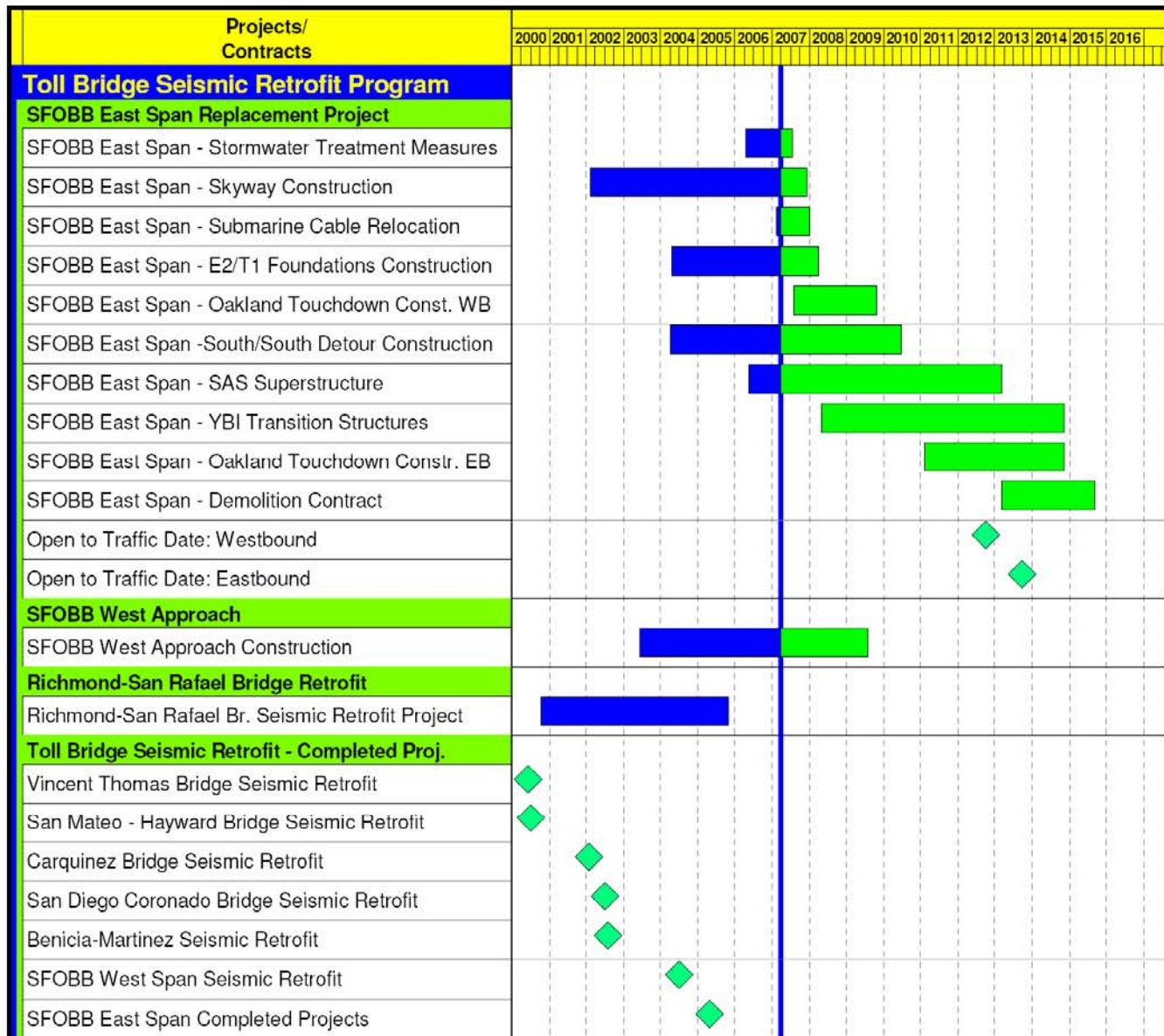
Note: Details may not sum to totals due to rounding effects.

Appendix B: Toll Bridge Seismic Retrofit Program Cost Detail (\$Millions)

Contract	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (03/2007)	Cost To Date (02/2007)	Cost Forecast (03/2007)	At-Completion Variance
a	c	d	e = c + d	f	g	h = g - e
SFOBB East Span Replacement Project						
Capital Outlay Support	959.4	-	959.4	480.2	977.1	17.7
Capital Outlay Construction	4,492.1	-	4,492.1	1,755.4	4,686.6	194.5
Other Budgeted Capital	35.1	-	35.1	0.6	11.0	(24.1)
Total	5,486.6	-	5,486.6	2,236.2	5,674.7	188.1
SFOBB West Approach Replacement						
Capital Outlay Support	120.0	-	120.0	89.3	120.0	-
Capital Outlay Construction	309.0	-	309.0	229.4	309.0	-
Total	429.0	-	429.0	318.7	429.0	-
SFOBB West Span Retrofit						
Capital Outlay Support	75.0	-	75.0	74.8	75.0	-
Capital Outlay Construction	232.9	-	232.9	226.3	232.9	-
Total	307.9	-	307.9	301.1	307.9	-
Richmond-San Rafael Bridge Retrofit						
Capital Outlay Support	134.0	(7.0)	127.0	125.9	127.0	-
Capital Outlay Construction	780.0	(82.0)	698.0	665.6	698.0	-
Total	914.0	(89.0)	825.0	791.5	825.0	-
Benicia-Martinez Bridge Retrofit						
Capital Outlay Support	38.1	-	38.1	38.1	38.1	-
Capital Outlay Construction	139.7	-	139.7	139.7	139.7	-
Total	177.8	-	177.8	177.8	177.8	-
Carquinez Bridge Retrofit						
Capital Outlay Support	28.7	-	28.7	28.8	28.7	-
Capital Outlay Construction	85.5	-	85.5	85.4	85.5	-
Total	114.2	-	114.2	114.2	114.2	-
San Mateo-Hayward Bridge Retrofit						
Capital Outlay Support	28.1	-	28.1	28.1	28.1	-
Capital Outlay Construction	135.4	-	135.4	135.3	135.4	-
Total	163.5	-	163.5	163.4	163.5	-
Vincent Thomas Bridge Retrofit (Los Angeles)						
Capital Outlay Support	16.4	-	16.4	16.4	16.4	-
Capital Outlay Construction	42.1	-	42.1	42.0	42.1	-
Total	58.5	-	58.5	58.4	58.5	-
San Diego-Coronado Bridge Retrofit						
Capital Outlay Support	33.5	-	33.5	33.2	33.5	-
Capital Outlay Construction	70.0	-	70.0	69.4	70.0	-
Total	103.5	-	103.5	102.6	103.5	-
Subtotal Capital Outlay Support	1,433.2	(7.0)	1,426.2	914.8	1,443.9	17.7
Subtotal Capital Outlay	6,286.7	(82.0)	6,204.7	3,348.5	6,399.2	194.5
Subtotal Other Budgeted Capital	35.1	-	35.1	0.6	11.0	(24.1)
Miscellaneous Program Costs	30.0	-	30.0	24.7	30.0	-
Subtotal Toll Bridge Seismic Retrofit Program	7,785.0	(89.0)	7,696.0	4,288.6	7,884.1	188.1
Program Contingency	900.0	89.0	989.0	-	800.9	(188.1)
Total Toll Bridge Seismic Retrofit Program	8,685.0	-	8,685.0	4,288.6	8,685.0	-

Note: Details may not sum to totals due to rounding effects.

Appendix C: Toll Bridge Seismic Retrofit Program Summary Schedule



Appendix D: Regional Measure 1 Program Cost Detail (\$Millions)

Project	EA Number	BATA Budget (07/2005)	Approved Changes	Current Approved Budget (03/2007)	Cost To Date (02/2007)	Cost Forecast (03/2007)	At-Completion Variance
a	b	c	d	e = c + d	f	g	h = g - e
New Benicia-Martinez Bridge Project							
New Bridge	00603_						
Capital Outlay Support		84.9	7.7	92.6	84.0	92.6	-
Capital Outlay Construction				-			-
BATA Funding		661.9	100.9	762.8	710.1	762.8	-
Non-BATA Funding		10.1	-	10.1	13.9	10.1	-
Subtotal		672.0	100.9	772.9	724.0	772.9	-
Total		756.9	108.6	865.5	808.0	865.5	-
I-680/I-780 Interchange Reconstruction							
I-680/I-780 Interchange Reconstruction	00606_						
Capital Outlay Support							
BATA Funding		24.9	4.0	28.9	28.3	28.9	-
Non-BATA Funding		1.4	5.1	6.5	5.5	6.5	-
Subtotal		26.3	9.1	35.4	33.8	35.4	-
Capital Outlay Construction							
BATA Funding		54.7	22.5	77.2	68.3	77.2	-
Non-BATA Funding		21.6	-	21.6	15.4	21.6	-
Subtotal		76.3	22.5	98.8	83.7	98.8	-
Total		102.6	31.6	134.2	117.5	134.2	-
I-680/Marina Vista Interchange Reconstruction							
I-680/Marina Vista Interchange Reconstruction	00605_						
Capital Outlay Support		18.3	1.2	19.5	19.8	19.5	-
Capital Outlay Construction		51.5	8.1	59.6	54.7	59.6	-
Total		69.8	9.3	79.1	74.5	79.1	-
New Toll Plaza and Administration Building							
New Toll Plaza and Administration Building	00604_						
Capital Outlay Support		11.9	3.3	15.2	15.1	15.2	-
Capital Outlay Construction		24.3	2.0	26.3	22.8	26.3	-
Total		36.2	5.3	41.5	37.9	41.5	-
Existing Bridge & Interchange Modifications							
Existing Bridge & Interchange Modifications	0060A_						
Capital Outlay Support		4.3	5.7	10.0	6.7	10.0	-
Capital Outlay Construction		17.2	10.9	28.1	-	28.1	-
Total		21.5	16.6	38.1	6.7	38.1	-
Other Contracts							
Other Contracts	See note below						
Capital Outlay Support		11.4	(2.3)	9.1	6.3	9.1	-
Capital Outlay Construction		20.3	(1.3)	19.0	15.2	19.0	-
Capital Outlay Right-of-Way		20.4	(0.1)	20.3	12.3	20.3	-
Total		52.1	(3.7)	48.4	33.8	48.4	-
Subtotal BATA Capital Outlay Support		155.7	19.7	175.3	160.2	175.3	-
Subtotal BATA Capital Outlay Construction		829.9	143.1	973.0	871.1	973.0	-
Subtotal Capital Outlay Right-of-Way		20.4	(0.1)	20.3	12.3	20.3	-
Subtotal Non-BATA Capital Outlay Support		1.4	5.1	6.5	5.5	6.5	-
Subtotal Non-BATA Capital Outlay Construction		31.7	-	31.7	29.3	31.7	-
Project Reserves		20.8	35.3	56.2	-	56.2	-
Total New Benicia-Martinez Bridge Project		1,059.9	203.1	1,263.0	1,078.4	1,263.0	-
Notes:							
Includes EA's 00601_, 00608_, 00609_, 0060A_, 0060C_, 0060E_, 0060F_, 0060G_, and 0060H_ and all Project Right-of-Way							

Note: Details may not sum to totals due to rounding effects.

Appendix D: Regional Measure 1 Program Cost Detail (\$Millions) (Cont'd.)

Project	EA Number	BATA Budget (07/2005)	Approved Changes	Current Approved Budget (03/2007)	Cost To Date (02/2007)	Cost Forecast (03/2007)	At-Completion Variance
a	b	c	d	e = c + d	f	g	h = g - e
Carquinez Bridge Replacement Project							
New Bridge	01301_						
Capital Outlay Support		60.5	(0.3)	60.2	60.1	60.2	-
Capital Outlay Construction		253.3	4.0	257.3	256.0	257.3	-
Total		313.8	3.7	317.5	316.1	317.5	-
Crockett Interchange Reconstruction	01305_						
Capital Outlay Support		32.0	(0.1)	31.9	31.9	31.9	-
Capital Outlay Construction		73.9	-	73.9	71.9	73.9	-
Total		105.9	(0.1)	105.8	103.8	105.8	-
Existing 1927 Bridge Demolition	01309_						
Capital Outlay Support		16.1	-	16.1	11.6	16.0	(0.1)
Capital Outlay Construction		35.2	-	35.2	23.6	35.2	-
Total		51.3	-	51.3	35.2	51.2	(0.1)
Other Contracts	See note below						
Capital Outlay Support		15.8	(0.7)	15.1	15.1	15.1	-
Capital Outlay Construction		18.8	(0.7)	18.1	15.3	17.9	(0.2)
Capital Outlay Right-of-Way		10.5	-	10.5	9.9	10.5	-
Total		45.1	(1.4)	43.7	40.3	43.5	(0.2)
Subtotal BATA Capital Outlay Support		124.4	(1.1)	123.3	118.7	123.2	(0.1)
Subtotal BATA Capital Outlay Construction		381.2	3.3	384.5	366.8	384.3	(0.2)
Subtotal Capital Outlay Right-of-Way		10.5	-	10.5	9.9	10.5	-
Project Reserves		12.1	(2.2)	9.9	-	10.2	0.3
Total Carquinez Bridge Replacement Project		528.2	-	528.2	495.4	528.2	-

Notes:

Other Contracts includes EA's 01302_, 01303_, 01304_, 01306_, 01307_, 01308_, 0130A_, 0130C_, 0130D_, 0130F_, 0130G_, 0130H_, 0130J_, 00453_, 00493_, 04700_, 00607_, 2A270_, and 29920_ and all Project Right-of-Way

Note: Details may not sum to totals due to rounding effects.

Appendix D: Regional Measure 1 Program Cost Detail (\$Millions) (Cont'd.)

Project	EA Number	BATA Budget (07/2005)	Approved Changes	Current Approved Budget (03/2007)	Cost To Date (02/2007)	Cost Forecast (03/2007)	At-Completion Variance
a	b	c	d	e = c + d	f	g	h = g - e
Richmond-San Rafael Bridge Trestle, Fender, and Deck Joint Rehabilitation	See note ¹ below						
Capital Outlay Support							
BATA Funding		2.2	-	2.2	1.4	2.2	-
Non-BATA Funding		8.6	-	8.6	10.4	10.4	1.8
Subtotal		10.8	-	10.8	11.8	12.6	1.8
Capital Outlay Construction							
BATA Funding		40.2	-	40.2	33.4	33.4	(6.8)
Non-BATA Funding		51.1	-	51.1	34.7	51.1	-
Subtotal		91.3	-	91.3	68.1	84.5	(6.8)
Project Reserves		-	-	-	-	-	-
Total		102.1	-	102.1	79.9	97.1	(5.0)
Richmond-San Rafael Bridge Deck Overlay Rehabilitation	0415U_						
Capital Outlay Support							
BATA Funding		4.0	0.5	4.5	3.3	4.5	-
Non-BATA Funding		4.0	(4.0)	-	-	-	-
Subtotal		8.0	(3.5)	4.5	3.3	4.5	-
Capital Outlay Construction		16.9	3.6	20.5	15.6	20.5	-
Project Reserves		0.1	(0.1)	-	-	-	-
Total		25.0	-	25.0	18.9	25.0	-
Richmond Parkway Project (RM 1 Share Only)	Non-Caltrans						
Capital Outlay Support		-	-	-	-	-	-
Capital Outlay Construction		5.9	-	5.9	3.9	5.9	-
Total		5.9	-	5.9	3.9	5.9	-
San Mateo-Hayward Bridge Widening	See note ² below						
Capital Outlay Support		34.6	(0.2)	34.4	34.1	34.4	-
Capital Outlay Construction		180.2	(1.1)	179.1	174.1	176.2	(2.9)
Capital Outlay Right-of-Way		1.5	-	1.5	0.5	0.6	(0.9)
Project Reserves		1.5	1.3	2.8	-	0.7	(2.1)
Total		217.8	-	217.8	208.7	211.9	(5.9)
I-880/SR-92 Interchange Reconstruction	EA's 23317_, 01601_, and 01602_						
Capital Outlay Support		28.8	-	28.8	30.9	51.7	22.9
Capital Outlay Construction							
BATA Funding		85.2	-	85.2	-	112.9	27.7
Non-BATA Funding		9.6	-	9.6	-	9.6	-
Subtotal		94.8	-	94.8	-	122.5	27.7
Capital Outlay Right-of-Way		9.9	-	9.9	8.3	12.4	2.5
Project Reserves		0.3	-	0.3	-	9.7	9.4
Total		133.8	-	133.8	39.2	196.3	62.5
Bayfront Expressway Widening	EA's 00487_, 01511_, and 01512_						
Capital Outlay Support		8.6	(0.3)	8.3	8.1	8.3	-
Capital Outlay Construction		26.5	-	26.5	24.9	26.5	-
Capital Outlay Right-of-Way		0.2	-	0.2	0.2	0.2	-
Project Reserves		0.8	0.3	1.1	-	1.1	-
Total		36.1	-	36.1	33.2	36.1	-
US 101/University Avenue Interchange Modification	Non-Caltrans						
Capital Outlay Support		-	-	-	-	-	-
Capital Outlay Construction		3.8	-	3.8	3.7	3.8	-
Total		3.8	-	3.8	3.7	3.8	-
Subtotal BATA Capital Outlay Support		358.3	18.6	376.8	356.7	399.6	22.8
Subtotal BATA Capital Outlay Construction		1,569.8	148.9	1,718.7	1,493.5	1,736.5	17.8
Subtotal Capital Outlay Right-of-Way		42.5	(0.1)	42.4	31.2	44.0	1.6
Subtotal Non-BATA Capital Outlay Support		14.0	1.1	15.1	15.9	16.9	1.8
Subtotal Non-BATA Capital Outlay Construction		92.4	-	92.4	64.0	92.4	-
Project Reserves		35.6	34.6	70.3	-	77.9	7.6
Total RM1 Program		2,112.6	203.1	2,315.7	1,961.3	2,367.3	51.6

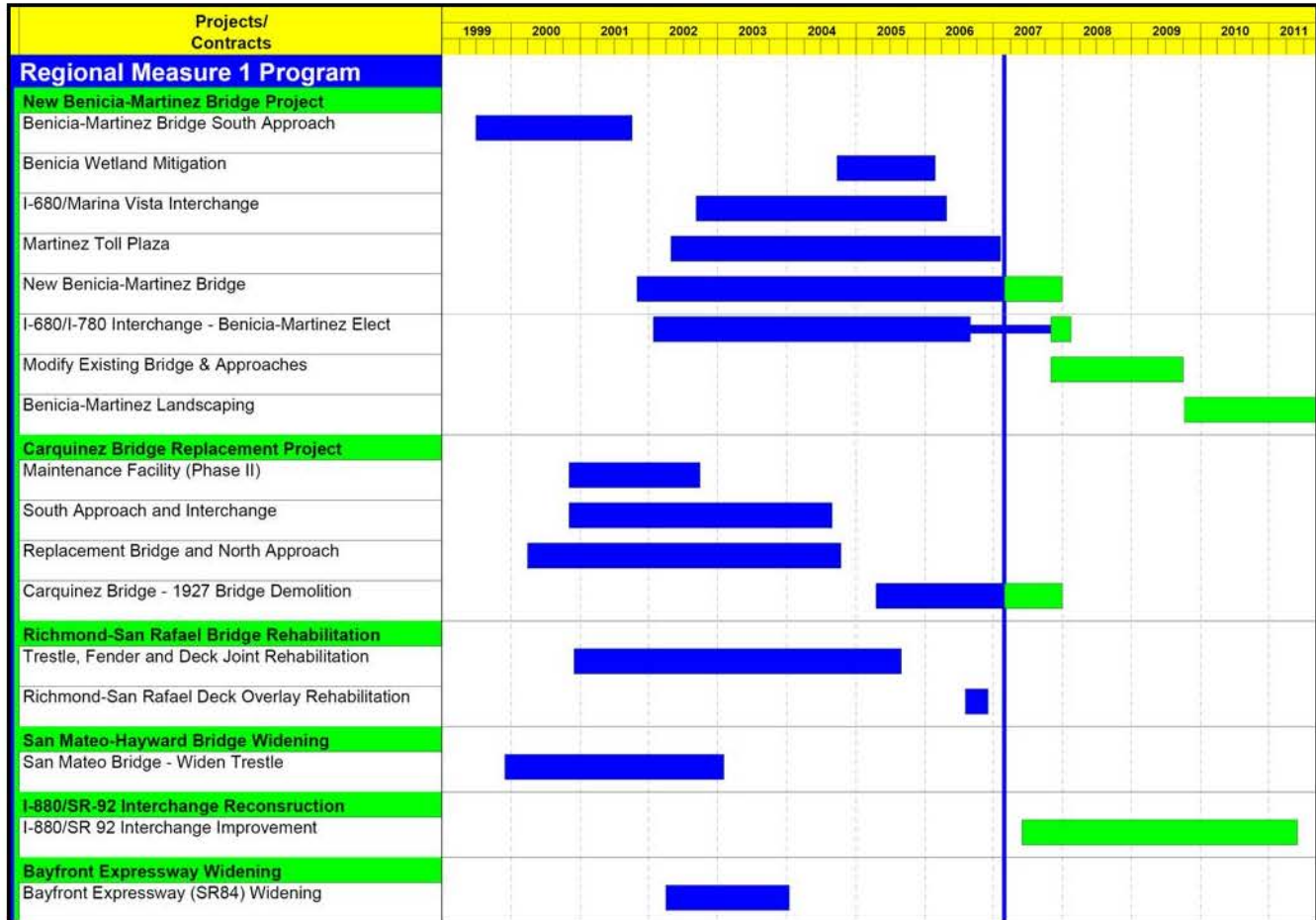
Notes:

¹ Richmond-San Rafael Bridge Trestle, Fender, and Deck Joint Rehabilitation Includes Non-TBSRA Expenses for EA 0438U_ and 04157_

² San Mateo-Hayward Bridge Widening Includes EA's 00305_, 04501_, 04502_, 04503_, 04504_, 04505_, 04506_, 04507_, 04508_, 04509_, 27740_, 27790_, 04860_

Note: Details may not sum to totals due to rounding effects.

Appendix E: Regional Measure 1 Program Summary Schedule



Appendix F: Glossary of Terms

AB144/SB 66 BUDGET: The planned allocation of resources for the Toll Bridge Seismic Retrofit Program, or subordinate projects or contracts, as provided in Assembly Bill 144 and Senate Bill 66, signed into law by Governor Schwarzenegger on July 18, 2005 and September 29, 2005, respectively.

BATA BUDGET: The planned allocation of resources for the Regional Measure 1 Program, or subordinate projects or contracts as authorized by the Bay Area Toll Authority as of June 2005.

APPROVED CHANGES: For cost, changes to the AB144/SB 66 Budget or BATA Budget as approved by the Bay Area Toll Authority Commission. For schedule, changes to the AB 144/SB 66 Project Complete Baseline approved by the Toll Bridge Program Oversight Committee, or changes to the BATA Project Complete Baseline approved by the Bay Area Toll Authority Commission.

CURRENT APPROVED BUDGET: The sum of the AB144/SB66 Budget or BATA Budget and Approved Changes.

COST TO DATE: The actual expenditures incurred by the program, project or contract as of the month and year shown.

COST FORECAST: The current forecast of all of the costs that are projected to be expended so as to complete the given scope of the program, project, or contract.

AT COMPLETION VARIANCE or VARIANCE (cost): The mathematical difference between the Cost Forecast and the Current Approved Budget.

AB 144/SB 66 PROJECT COMPLETE BASELINE: The planned completion date for the Toll Bridge Seismic Retrofit Program or subordinate projects or contracts.

BATA PROJECT COMPLETE BASELINE: The planned completion date for the Regional Measure 1 Program or subordinate projects or contracts.

PROJECT COMPLETE CURRENT APPROVED SCHEDULE: The sum of the AB144/SB66 Project Complete Baseline or BATA Project Complete Baseline and Approved Changes.

PROJECT COMPLETE SCHEDULE FORECAST: The current projected date for the completion of the program, project, or contract.

SCHEDULE VARIANCE or VARIANCE (schedule): The mathematical difference expressed in months between the Project Complete Schedule Forecast and the Project Complete Current Approved Schedule.

The following information is provided in accordance with California Government code Section 7550:

This document is one of a series of reports prepared for the Bay Area Toll Authority (BATA)/Metropolitan Transportation Commission (MTC) for the Toll Bridge Seismic Retrofit and Regional Measure 1 Programs. The contract value for the monitoring efforts, technical analysis, and field site works that contribute to these reports, as well as the report preparation and production, is \$1,574,873.

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Memorandum

TO: Toll Bridge Program Oversight Committee **DATE:** April 25, 2007
(TBPOC)

FR: Tony Anziano, Toll Bridge Program Manager, Caltrans

RE: Agenda No. - 3c
Progress Report
Item- Draft First Quarter Report Ending March 31, 2007

Cost:

N/A

Schedule Impacts:

N/A

Recommendation:

For Information Only

Discussion:

Attached are the Projected 1st Quarter 2007 Report Production Schedule which reflects the status of completed report tasks and the schedule for remaining actions, and the Draft First Quarter Report Ending March 31, 2007.

TBPOC comments on the Proposed Final Draft of the First Quarter Report Ending March 31, 2007 are anticipated by COB Friday, May 4.

Attachments:

Projected 1st Quarter 2007 Report Production Schedule
Draft First Quarter Report Ending March 31, 2007



TOLL BRIDGE PROGRAM OVERSIGHT COMMITTEE

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

Projected 1st Quarter 2007 Report Production Schedule

Action	Deadline for Action
1st Quarter 2007 Report: Legislated Deadline - May 15, 2007	
BAMC Begins Quarterly Report Development; Issues First Call for Input	Monday, March 19, 2007
BAMC Prepares Quarterly Report 1st Draft for PMT, BATA, Caltrans	Monday, April 09, 2007
PMT / BATA / Caltrans Review & Comment on 1st Draft	Thursday, April 12, 2007
BAMC Incorporates Comments: Produces 2nd Draft for TBPOC Review	Friday, April 13, 2007
TBPOC Reviews & Comments on 2nd Draft	Monday, April 23, 2007
Expenditure Update (Anticipated Date)	Monday, April 23, 2007
BAMC Incorporates Comments; Produces Proposed Final Draft for TBPOC and Agency	Monday, April 23, 2007
BAMC Issues Proposed Final Draft to TBPOC & Agency	Thursday, April 26, 2007
TBPOC and Agency Review / Comment on Proposed Final Draft	Friday, May 04, 2007
BAMC Incorporates Comments: Produces Advanced Final Draft + Table of Conflicting Comments	Wednesday, May 09, 2007
TBPOC Teleconference to make Final Comments and Resolve Conflicting Comments	Friday, May 11, 2007
BAMC Incorporates All Final Comments from TBPOC; Emails Final Version for Information	Monday, May 14, 2007
Produce & Issue Quarterly Report to Legislature & CTC	Tuesday, May 15, 2007

Toll Bridge Seismic Retrofit Program Report

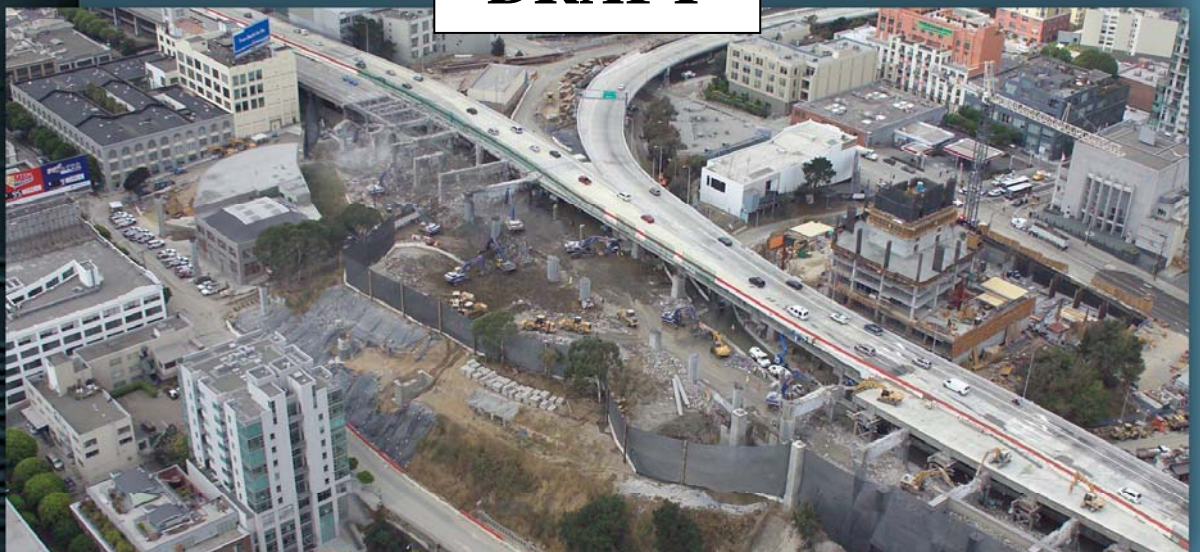


TOLL BRIDGE PROGRAM OVERSIGHT COMMITTEE

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION



DRAFT



First Quarter Report

March 31, 2007

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Executive Summary

The Toll Bridge Program Oversight Committee (TBPOC) submits the 2007 First Quarter Report ending March 31, 2007, for the Toll Bridge Seismic Retrofit Program (TBSRP) in accordance with Assembly Bill (AB) 144 and Senate Bill (SB) 66. This report provides the following:

1. Information on the progress of each project in the program.
2. Baseline budget for Capital Outlay (CO) and Capital Outlay Support (COS).
3. Current projected costs for CO and COS.
4. Expenditures to date.
5. Comparison of the baseline schedule to the March 2007 projected schedule.
6. Summary of the milestones achieved during the quarter.
7. Major risk assessment for the remaining projects.
8. Summary of expenses incurred by the TBPOC in performing its duties.

Major Milestones During the First Quarter 2007

Significant progress on the completion of the seismic retrofit projects continued during this past quarter. Appendix D includes a gallery of photos of construction activities on the bridge projects. Only one of the seven toll bridges in the TBSRP remains to be retrofitted. The major milestones achieved during the quarter include:

- The San Francisco-Oakland Bay Bridge (SFOBB) West Approach Project is 77 percent complete as of March 20, 2007 and is on schedule to finish in August 2009. Seismic retrofit construction continues with Frame 8U achieving a significant milestone by having both the north and south sections transversely stressed together into one structural unit. Major ongoing work during the quarter includes the continuation of work on the 5th Street and Harrison Street ramps, the 4th Street retrofit work and the interim eastbound detour (the ST6D alignment) where the Eastbound (EB)

lower deck traffic was switched on to the temporary ST6D EB alignment on March 27, 2007. The next major phase is the demolition of the final 3000-foot section of the old I-80 freeway structure from 2nd Street (near the Historic Clocktower) to 4th Street. This demolition has a compressed schedule from the as-planned 110 days down to 17 days and has been implemented in order to minimize impacts and inconvenience to the local residents and businesses. An extensive public outreach will begin well in advance of this work and include all of the upcoming impacts from future activities.

- The SFOBB East Span Seismic Replacement Project Skyway contract is expected to be completed in December 2007. The final closure pour was completed in February 2007. Remaining work includes fabrication and installation of the remaining hinge pipe beams, post-tensioning of the bridge segments and spans, installation of bicycle/pedestrian pathway, erection of the service platforms, and other finish and punchlist work.
- The SFOBB East Span Seismic Replacement Project Self-Anchored Suspension (SAS) Marine Foundation East Pier and Tower Pier



SFOBB Skyway – West End

(E2/T1) contract is on schedule to be completed by March 2008. At the East Pier (E2), foundation pile driving has been completed. E2 footing frames are now being welded to the piles. At the Tower Pier (T1), all steel foundation casings have been installed. The T1 footing box was placed in March 2007. Work is now progressing in preparation of the T1 bottom slab concrete placement.

- For the SFOBB East Span Seismic Replacement Project SAS Superstructure contract, the Contractor is mobilizing staff to the field office at Pier 7 in Oakland. Development of various administrative submittals, including the baseline schedule, is continuing. The Contractor is finalizing agreements with manufacturers, fabricators, suppliers and subcontractors. A contract with Zhenhua Port Machinery Company (ZPMC), of Shanghai, China, to supply and fabricate all the major steel structures in SAS including the tower, orthotropic box girders, and bike paths, was executed on July 18, 2006.
- For the SFOBB East Span Seismic Replacement Project Yerba Buena Island South-South Detour (SSD) contract, Caltrans is designing the East and West tie-ins from the existing bridge and tunnel to the detour structure. The construction of the tie-ins are being managed by Caltrans to be completed in conjunction with the SAS schedule to minimize impacts to the traveling public. The W3L work that is part of the Yerba Buena Island Transition Structures (YBITS) advanced work that was added to the SSD was completed.
- The SFOBB Seismic Replacement Project Stormwater Treatment Measures contract is 45 percent complete as of December 2006. The current schedule forecast reflecting an earlier completion date than the approved schedule is due to the combination of an early contract award date and the shorter construction duration bid by the Contractor. Work continues on installation of drainage structures, installation of

ductile iron pipe, and installation of pump stations. Work on the bioretention basins has started.

- The SFOBB East Span Seismic Replacement Project Oakland Touchdown (OTD) Submarine Cable contract to replace the existing submerged electrical cable from Oakland to Treasure Island was approved by Caltrans on January 11, 2007. The contractor is currently preparing contract submittals for Caltrans review and has placed an order for the cabling.



Pile Driving at East Pier



Pump Station 1B Valve Vault: Stormwater Treatment Measure Contract

- The SFOBB East Span Seismic Replacement Project, OTD #1 contract includes construction of all the marine and land foundations (except for the eastbound abutment), westbound bridge section, one frame of the eastbound bridge section and roadway approach for the section that connects the new Skyway portion to the roadway west of the Oakland Toll Plaza. Design work is complete. This contract was advertised on February 26, 2007 with bid opening planned for June 5 2007. The contract completion is scheduled for October 2009. (See picture below.)
- In September 2006, Bay Area Toll Authority (BATA) contracted with a geotechnical firm to proceed with a comprehensive seismic analysis of the Dumbarton and Antioch Bridges. Field work included on this contract commenced in December 2006.
- In October 2006, the TBPOC approved a budget change for the Richmond-San Rafael Bridge Seismic Retrofit project, with a transfer of \$89 million in project cost savings to the Toll Bridge Seismic Retrofit Program Contingency.
- As shown on *Table 2-Toll Bridge Seismic Retrofit Program—Cost Summary* (see page 8), the program contingency for the total seismic retrofit program is \$940. 7 million, which is \$48. 3 million less than the program contingency shown in the 2nd Quarter Report. The reduced contingency is due to revised forecasts for some of the SFOBB East Span contracts. As shown in the table, the revised program contingency continues to exceed the original contingency budgeted in the AB 144/SB 66 program.



Submarine Cable Relocation

Program Overview

Seven of the nine state-owned toll bridges were identified for seismic retrofit in the Toll Bridge Seismic Retrofit Program (TBSRP):

1. Benicia-Martinez Bridge
2. Carquinez Bridge
3. San Mateo-Hayward Bridge
4. Vincent Thomas Bridge
5. San Diego-Coronado Bridge
6. Richmond-San Rafael Bridge
7. SFOBB (west span, west approach replacement, and east span replacement).

Seismic retrofit of these complex structures presents an extremely difficult engineering challenge and nowhere in the world has a bridge seismic safety program of this size been undertaken. Although the Dumbarton and the Antioch bridges were not included in the program, Caltrans is continuing to work on seismic vulnerability studies to assess the

potential for necessary retrofit work on these structures. See discussion on page 2.

As shown in *Table 1-TBSRP Project Status*, a significant portion of the TBSRP is complete. Cost savings of \$89 million from the project cost included in the AB 144/SB 66 baseline budget on the completed Richmond-San Rafael Bridge has been transferred to the Toll Bridge Seismic Retrofit Program Contingency, as directed by the TBPOC.

The SFOBB west approach and new east span seismic replacement projects are currently under construction. The First Quarter 2007 forecast for those projects indicates that they will be completed within the current TBPOC approved cost and schedule estimates.

Tables 2 and 3 provide a summary of the cost, schedule, and status of all the TBSRP projects.

Table 1-TBSRP Project Status

Toll Bridge Seismic Retrofit Projects	Seismic Safety Status
San Francisco-Oakland Bay Bridge East Span Replacement	Construction
San Francisco-Oakland Bay Bridge West Approach Replacement	Construction
San Francisco-Oakland Bay Bridge West Span Seismic Retrofit	Complete
San Mateo-Hayward Bridge Seismic Retrofit	Complete
Richmond-San Rafael Bridge Seismic Retrofit	Complete
Carquinez Bridge Eastbound Seismic Retrofit	Complete
Benicia-Martinez Bridge Seismic Retrofit	Complete
San Diego-Coronado Bridge Seismic Retrofit	Complete
Vincent Thomas Bridge Seismic Retrofit	Complete

Risk Management

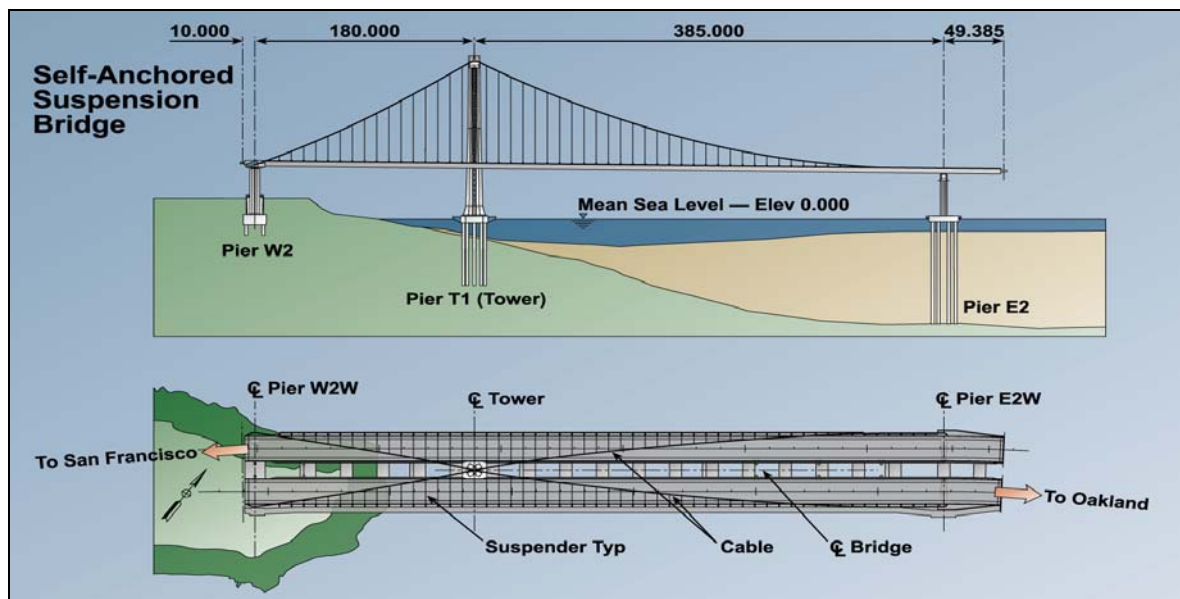
The following is a summary of risk management activities during the First Quarter of 2007.

Developments this Quarter

- **Corridor Schedule Risk Analysis:** The project schedules have been integrated into a corridor schedule for schedule risk analysis. The schedule has been updated according to the accepted SAS schedule. The schedule risk analysis is on-going with the participation of the Corridor Schedule Team.
- **Corridor Schedule Team:** The Corridor Schedule Team (CST) reviews, assesses and mitigates corridor schedule risks for the East Span. The CST reviewed several opportunities to enhance the schedule and provided recommendations to management regarding schedule decisions and risk mitigation:
 - Several Yerba Buena Island (YBI) Transition Structure foundations have been moved into the South-South Detour (SSD) contract. This reduces the risk that construction of the foundations (inherently risky owing to potential differing site conditions) may cause a delay to the corridor because such work will be completed well in advance of when needed.
 - The careful phasing of the SSD West Tie-in construction will complete this critical work well ahead of when the structure will be required, minimizing the number of bridge closures, and reducing the risk of delay. It replaces much of the existing viaduct near the tunnel portal, eliminating the risk of unforeseen problems during retrofit of an old structure.
 - A milestone was added to the OTD 1 contract documents for early completion of westbound access to the Skyway. This is intended to assure that the Self-Anchored Suspension (SAS) bridge contractor will have timely access to the SAS site via the Skyway.
- The Corridor Schedule Team evaluated a request from the SAS contractor for additional work area on YBI to facilitate the construction of the W2 cap beam, temporary towers for the bridge deck on and near YBI, and cable installation. The Team recommended that the extra work area be granted to reduce the risk of delays arising from this work.
- **Capital Outlay Support Risks:** The Capital Outlay Support (COS) risk register contains support cost risks that affect all projects and incorporates from the project risk registers those risks that have an impact on COS. The risk were updated this quarter, including a revision of Department overhead rate projections.
- **Program-level Risks:** The program-level risk register captures risks that are common to all projects. Many of the risks have been quantified this quarter and are included in the assessment of the adequacy of the Program Reserve.
- **Corridor Contingency:** Corridor contingency is the sum of the contingency allowance remaining on the projects. It is intended to cover project risks. On-going quantitative risk analysis assesses the adequacy of the corridor contingency, and any potential need to increase it.
- **Adequacy of Reserves:** AB144 requires Caltrans to regularly assess its reserves for risks and potential claims. Currently, there is a forecasted \$940.7 million Program Reserve. Quantitative risk analysis is on-going to assess the combined effect of corridor contingency, COS risks and program-level risks. Results indicate that a draw on the Reserve may ultimately be necessary.

Risk Management Achievements on Contracts

- **Skyway Contract:** No significant schedule risks remain and there has been no increase in cost risk exposure. Outstanding Notices of Potential Claim are being resolved.
- **West Approach:** The project team has completed several risky work elements, such as the opening of the revised ST6D detour to traffic. The new lane alignment eliminates constructability issues associated with the temporary on-ramps and the potential for significant traffic operations difficulties.
- **E2-T1 Foundations Contract:** A number of risks have been reduced or retired as the work has progressed beyond the risks. The contract is unlikely to delay the SAS contract, affirming a schedule risk assessment about one year ago by Risk Management.
- **South-South Detour Contract:** A well-defined plan has been completed with the contractor to mitigate risks to the planned bridge closure. Efforts are continuing to mitigate schedule risks to the next milestones.
- **SAS Contract:** Potential fabrication and quality assurance risks were investigated during visits to China, and mitigation options are under consideration. Caltrans is studying the contractor's request for availability of additional work area for cable installation. It has potential impacts on SAS work sequencing, work on the YBI Transition Structures, and the corridor schedule.
- **Submarine Cable Relocation Contract:** The contractor's schedule will meet the required date. Cable procurement is underway and, if it arrives as planned, there will be no risk of delay to the Oakland Touchdown contract or the corridor. On January 11, 2007, Caltrans approved a contract with Manson Construction for this project.



Near-Term Risk Management Actions

The anticipated risk management activities over the next two quarters will focus on:

- Continuing the development and execution of effective risk responses for all projects.
- Assessing COS, program-level, and corridor schedule risks.
- Evaluating potential draws on the Program Reserve.
- Further refining risk management procedures and processes.

Forecast near-term risk management activities are based on what is known and anticipated at this time. They remain subject to change as conditions, events, and priorities dictate.

Table 2-Toll Bridge Seismic Retrofit Program—Cost Summary (\$Millions)

Project	Work Status	AB 144 / SB 66 Budget (07/2005)	Approved Changes	Current Approved Budget (12/2006)	Actual Cost To Date (11/2006)	4 th Quarter 2006 Forecast	At-Completion Variance	Cost Status
a	b	c	d	e = c + d	f	g	h = g - e	i
SFOBB East Span Replacement Project								
Capital Outlay Support		959.4	-	959.4	461.9	977.1	17.7	●
Capital Outlay Construction								
Skyway	Construction	1,293.0	-	1,293.0	1,107.5	1,293.0	-	●
SAS E2/T1 Foundations	Construction	313.5	-	313.5	187.2	313.5	-	●
SAS Superstructure	Construction	1,753.7	-	1,753.7	211.2	1,767.4	13.7	●
YBI Transition Structures	Design	299.3	-	131.9	36.6	152.2	20.3	●
Oakland Touchdown		283.8	-	299.3	-	318.5	19.2	
* OTD Submarine Cable	Advertise			283.8	-	302.5	18.7	●
* OTD No. 1 (Westbound)	Design				-	9.6	-	●
* OTD No. 2 (Eastbound)	Design				-	226.5	-	●
* OTD Electrical Systems	Design				-	62.0	-	●
South/South Detour	Design/ Const	131.9	-		-	4.4	-	●
Existing Bridge Demolition	Design	239.2	-	239.2	-	222.0	(17.2)	●
Stormwater Treatment Measures	Construction	15.0	-	15.0	4.4	15.0	-	●
East Span Completed Projects		90.3	-	90.3	88.6	90.3	-	
Right-of-Way and Environmental Mitigation		72.4	-	72.4	38.8	72.4	-	●
Other Budgeted Capital		35.1	-	35.1	0.6	11.0	(24.1)	
Total SFOBB East Span Replacement Project		5,486.6	-	5,486.6	2,136.8	5,534.9	48.3	
SFOBB West Approach Replacement								
Capital Outlay Support	Construction	120.0	-	120.0	86.0	120.0	-	●
Capital Outlay Construction		309.0	-	309.0	218.8	309.0	-	
Total SFOBB West Approach Replacement		429.0	-	429.0	304.8	429.0	-	
Richmond-San Rafael Bridge Retrofit								
Capital Outlay Support	Construction	134.0	(7.0)	127.0	125.6	127.0	-	●
Capital Outlay Construction		780.0	(82.0)	698.0	665.6	698.0	-	
Total Richmond-San Rafael Bridge Retrofit		914.0	(89.0)	825.0	791.2	825.0	-	
Program Completed Projects								
Capital Outlay Support	Complete	219.8	-	219.8	219.4	219.8	-	
Capital Outlay Construction		705.6	-	705.6	698.0	705.6	-	
Total Program Completed Projects		925.4	-	925.4	917.4	925.4	-	
Miscellaneous Program Costs								
Program Contingency		30.0	-	30.0	24.5	30.0	-	
Program Contingency		900.0	89.0	989.0	-	940.7	(48.3)	
Total Toll Bridge Seismic Retrofit Program		8,685.0	-	8,685.0	4,174.7	8,685.0	-	

● Within Approved Schedule and Budget

● Potential Cost and Schedule Impacts: Likely future need for Program Contingency Allocation

● Known Cost and Schedule Impacts: Request for Program Contingency Allocation forthcoming

Note: Details may not sum to totals due to rounding effects.

Table 3-Toll Bridge Seismic Retrofit Program—Schedule Summary

Project	AB 144 / SB 66 Project Complete Baseline (07/2005)	Approved Changes (Months)	Project Complete Current Approved Schedule (12/2006)	Project Complete Schedule Forecast (12/2006)	Schedule Variance (Months)	Schedule Status	Remarks
a	b	c	d= b + c	E	f = e – d	g	h
SFOBB East Span Replacement Project Skyway	Apr 07	8	Dec 07	Dec 07	-	●	A schedule extension due to hinge pipe beam fabrication, service platforms electrical appurtenances, polyester concrete, etc. , has been approved by the TBPOC.
SAS E2/T1 Foundations	Jun 08	(3)	Mar 08	Mar 08	-	●	
SAS Superstructure	Mar 12	12	Mar 13	Mar 13	-	●	Contract executed on May 3, 2006. See Note.
YBI Transition Structures	Nov 13	12	Nov 14	Nov 14	TBD	●	In March 2006, the TBPOC approved the split of the YBI contract into three contracts. Schedules and estimates for the split contracts are being developed.
Oakland Touchdown (OTD)	Nov 13	12	Nov 14	Nov 14	-	●	
• OTD Submarine Cable	n/a		Jan 08	Jan 08	-	●	
• OTD Westbound	n/a		Jul 09	Oct 09	3	●	Advertise date postponed to provide additional time for utility coordination and contract formation.
• OTD Eastbound	n/a		Nov 14	Nov 14	-	●	See Note.
YBI South/South Detour	Jul 07	36	Jun 10	Jun 10	-	●	
Existing Bridge Demolition	Sep 14	12	Sep 15	Sep 15	-	●	See Note.
Stormwater Treatment Measures	Mar 08	-	Mar 08	Mar 08	(9)	●	Forecast based on actual award date and duration in Contractor's A+B bid.
Open to Traffic Date: Westbound	Sep 11	12	Sep 12	Sep 12	-	●	See Note.
Open to Traffic Date: Eastbound	Sep 12	12	Sep 13	Sep 13	-	●	See Note.
SFOBB West Approach Replacement	Aug 09	-	Aug 09	Aug 09	-	●	
Richmond-San Rafael Bridge							
• Seismic Retrofit	Aug 05	-	Aug 05	Oct 05	2	●	Seismic retrofit completed July 29, 2005. Formal acceptance of this contract on October 28, 2005. \$89 million has been transferred to Program Contingency. Bids to be opened November 1, 2006.
• Public Access Project	n/a		May 07	May 07	-	●	

Note: Schedules for selected projects and the Open to Traffic dates were extended by 12 months from the AB 144/SB 66 baseline schedule due to Addenda #5 and #7 on the SAS Superstructure contract in response to bidder inquiries and to reduce costs.

Program Costs

Baseline and Projected Budget

The 2005 AB 144/SB 66 baseline budget is \$7.785 billion for CO and COS plus \$900 million in program contingency, for a total baseline budget of \$8.685 billion. The First Quarter 2007 forecast for the program remains within the \$8.685 billion budget. As highlighted above, \$89 million cost savings on the Richmond-San Rafael Bridge project has been transferred to the Toll Bridge Seismic Retrofit Program Contingency, as directed by the Toll Bridge Program Oversight Committee (TBPOC). The First Quarter forecast for the SFOBB East Span Project has increased to \$5.535 billion due to a revised construction cost estimate on the OTD #1 and YBI SSD contracts.

Additional cost estimate and expenditure detail for the TBSRP are included in Appendices A-1 and A-2. The details of the cost estimates and expenditures for the SFOBB east span are shown in Appendix B.

Summary of TBPOC Expenses

Pursuant to Streets and Highways Code Section 30952.1 (d), expenses incurred by Caltrans, BATA, and the California Transportation Commission (CTC) for costs directly related to the duties associated with the TBPOC are to be reimbursed by toll revenues. *Table 5-Toll Bridge Program Oversight Committee Actual Expenses: July 1, 2005 through December 31, 2006* shows actual expenses through December 31, 2006, for TBPOC functioning, support, and monthly and quarterly reporting.

**Table 4-Toll Bridge Seismic Retrofit Program Baseline
(AB 144/SB 66) And Forecasts (\$ million)**

To be updated

Contracts	AB 144 / SB 66 Baseline Budget	Approved Changes	Current Approved Budget	4th Quarter 2006 Forecast	Difference from Current Approved Budget
Completed Projects					
Benicia-Martinez	177.8	-	177.8	177.8	-
Carquinez	114.2	-	114.2	114.2	-
San Mateo-Hayward	163.5	-	163.5	163.5	-
Vincent Thomas	58.5	-	58.5	58.5	-
San Diego-Coronado	103.5	-	103.5	103.5	-
SFOBB West Span	307.9	-	307.9	307.9	-
Ongoing Projects					
Richmond-San Rafael	914.0	(89.0)	825.0	825.0	-
SFOBB West Approach	429.0	-	429.0	429.0	-
SFOBB East Span	5,486.6	-	5,486.6	5,534.9	48.3
Miscellaneous Program Costs	30.0	-	30.0	30.0	-
Subtotal	7,785.0	(89.0)	7,696.0	7,744.3	48.3
Program Contingency	900.0	89.0	989.0	940.7	(48.3)
Total Program	8,685.0	-	8,685.0	8,685.0	-

To be updated

Table 5-Toll Bridge Program Oversight Committee
Actual Expenses: July 1, 2005 through December 31, 2006
 (\$ Millions)

Agency/Program Activity	FY 2005 - 2006 Actual Costs
BATA	0.2
Caltrans	0.3
CTC	0.1
Reporting	0.9
Total Program	1.5



Aerial view of Skyway construction



Aerial view of Bay Bridge East Span and new Skyway

Program Schedule

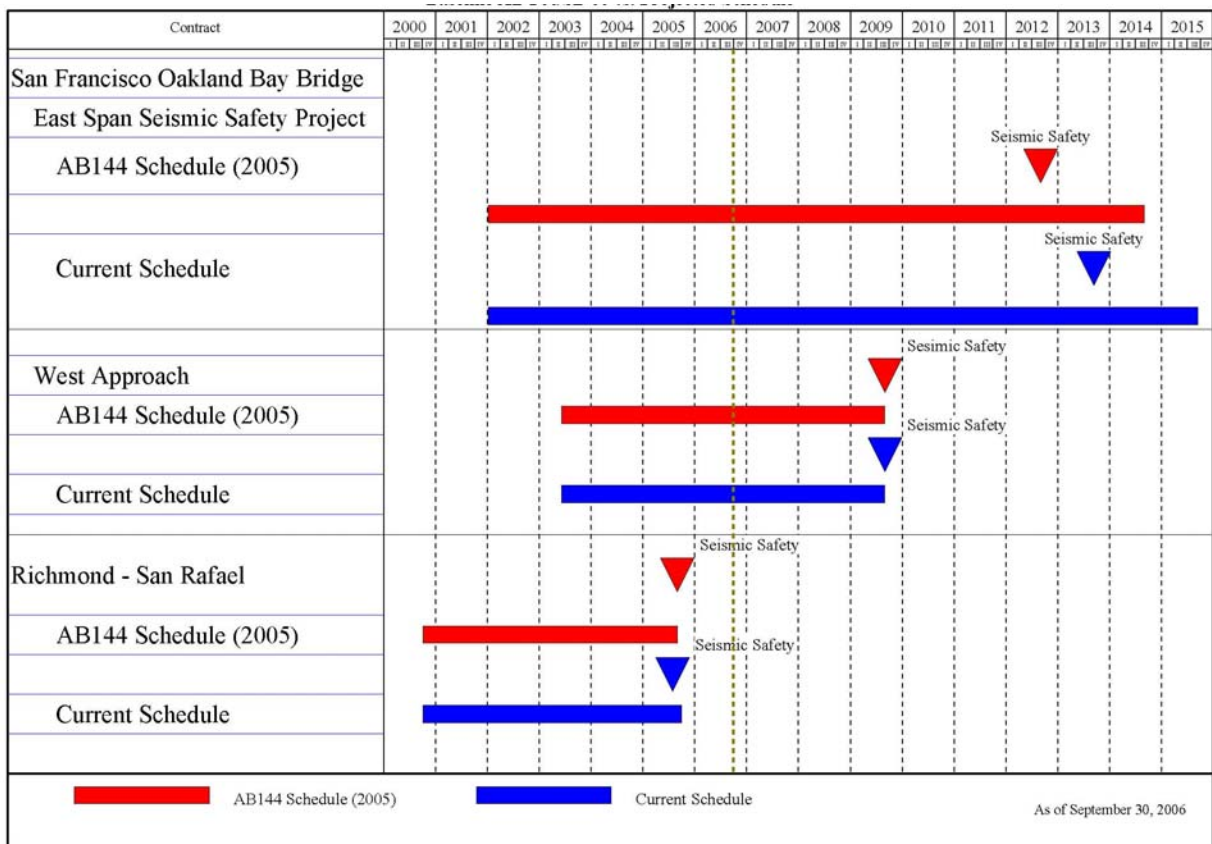
Baseline and Projected Schedule

Seismic retrofit on six of the seven toll bridges in the TBSRP is complete. These structures include the Benicia-Martinez, Carquinez, Richmond-San Rafael, San Mateo-Hayward, Vincent Thomas, and San Diego-Coronado bridges. Seismic retrofiting of the SFOBB west span was completed in June 2004. The SFOBB West Approach and East Span Seismic Replacement projects are currently under construction. The December 2006 schedule calls for achieving seismic safety and opening to traffic the SFOBB new east span in 2013. Since the adoption of the AB 144/SB 66 baseline schedule,

the opening date for the project has been extended by 12 months due to the approval of Addendum #5 and Addendum #7 to the SFOBB East Span Seismic Replacement Project SAS contract. Although the current schedule forecast does not reflect achievement of the six-month early completion incentive provided for by SAS contract Addendum #7, schedule planning for the OTD and YBITS contracts is being done as to respond to this possibility. It is estimated that all of the construction activities for the SFOBB East Span Seismic Replacement project will be completed by 2015, marked by the planned demolition of the existing SFOBB east span. The completion of the Skyway contract has been revised from April 2007 to December 2007 as approved by the TBPOC due

Chart 1-Toll Bridge Seismic Retrofit Program Schedule
Baseline AB 144/SB 66 vs. Projected Schedule

To be updated



to a Contract Change Order (CCO) executed with

the Contractor that resolves a variety of construction issues. This change in the contract's completion date will not delay the open-to-traffic date for the new east span. The schedule for the SSD contract has been affected by the 12-month change to the SAS contract schedule and the extensive study to find a best solution. The amount of delay to this contract is yet to be determined and is subject to analysis by Caltrans and negotiation with the Contractor. This delay is not expected to impact the open-to-traffic for the new east span. *Chart 1-Toll Bridge Seismic Retrofit Program Schedule*, shows the baseline, AB 144/ SB 66 project schedule versus the projected completion schedules for the TBSRP projects under construction.



Westbound Orthotropic Box Girder: Skyway Contract



SSD Construction



Cofferdam Frame for East Pier

Program Funding and Financing

AB 144 established a funding level of \$8.685 billion for the TBSRP. The bill specifies funding sources for the program, as shown in *Table 6-Program Budget*.

To be updated

Table 6-Program Budget as of December 31, 2006 (\$ Millions)

	Budgeted	Funding Available & Contributions
Financing		
Seismic Surcharge Revenue AB 1171	\$2,282	\$2,282.0
Seismic Surcharge Revenue AB 144	\$2,150	\$2,150.0
BATA Consolidation	\$820	\$820.0
Subtotal - Financing	\$5,252	\$5,252.0
Contributions		
Proposition 192	\$790	\$789.0
San Diego Coronado Toll Bridge Revenue Fund	\$33	\$33.0
Vincent Thomas Bridge	\$15	\$6.9
State Highway Account ⁽¹⁾⁽²⁾	\$745	\$745.0
Public Transportation Account ⁽¹⁾⁽³⁾	\$130	\$90.0
ITIP/SHOPP/Federal Contingency	\$448	\$0.0
Federal Highway Bridge Replacement and Rehabilitation (HBRR)	\$642	\$500.0
SHA - East Span Demolition	\$300	
SHA - "Efficiency Savings" ⁽⁴⁾	\$130	\$2.0
Redirect Spillover	\$125	
Motor Vehicle Account	\$75	\$75.0
Subtotal - Contributions	\$3,433	\$2,240.9
Total Funding	\$8,685	\$7,492.9
Allocated to date		\$5,994.7
Remaining Unallocated		\$1,498.2
<p>⁽¹⁾ The California Transportation Commission adopted a new schedule and changed the PTA/SHA split on December 15, 2005.</p> <p>⁽²⁾ To date, \$645 million has been transferred from the SHA to the TBSRP, including the full \$290 million transfer scheduled by the CTC to occur in 2005-06. An additional \$100 million has been expended directly from the account.</p> <p>⁽³⁾ To date, \$90 million has been transferred from the PTA to the TBSRP, including the full \$80 million transfer scheduled by the CTC to occur in 2005-06. Approximately \$40 million remains to be transferred. The Department anticipates transfer of such balance in Fiscal Year 2006-07 as directed by the California Transportation Commission.</p> <p>⁽⁴⁾ To date, \$2 million has been transferred from the SHA to the TBSRP, representing the commitment of "Efficiency Savings" for 2005-06 identified under AB 144. Approximately \$128 million remains to be distributed as scheduled by the CTC.</p> <p>Notes: Program budget includes \$900 million program contingency.</p>		

Funding Status

The program's financial status of revenues and expenditures is summarized in the table below, *Table 7-Toll Bridge Seismic Retrofit Program Financial Status*. The figures include the surcharge revenues collected, transfers from the SHA and the

PTA, and expenditures from the Toll Bridge Seismic Retrofit Account (TBSRA) and the Seismic Retrofit Bond Act of 1996 (Proposition 192). Through September 2005, \$789 million provided by Proposition 192 has been allocated by the CTC.

**Table 7-Toll Bridge Seismic Retrofit Program Financial Status
as of December 31, 2006 (\$ Millions)**

To be updated

Revenues:	
Toll Surcharge ⁽¹⁾	687.9
Surplus Money Investment Fund (SMIF) Interest	97.9
Bond Revenue (Seismic Bond of 1996)	789.0
Bond Revenue (Toll Revenue Bonds)	1,062.0
Commercial Paper ⁽²⁾	80.0
San Diego Association of Governments (SANDAG)	33.0
Vincent Thomas ⁽³⁾	6.9
Federal Highway Bridge Replacement and Rehabilitation	500.0
Transfers to TBSRA:	
Motor Vehicle Account	75.0
SHA ⁽⁴⁾	745.0
PTA ⁽⁵⁾	90.0
SHA "Efficiency Savings" ⁽⁶⁾	2.0
Total Revenues and Transfers	4,168.7
Expenditures:	
Capital Outlay	3,145.4
State Operations	903.4
Total Expenditures	4,048.8
Encumbrances:	
Capital Outlay	1,934.4
State Operations	11.5
Total Encumbrances	1,945.9
Total Expenditures and Encumbrances	5,994.7
(1) The Toll Surcharge is dedicated to repayment of bonds beginning September 1, 2003. Toll Surcharge shown here is only toll revenue collected prior to that date.	
(2) \$80 Million in Commercial Paper issued on or about April 5, 2005.	
(3) No additional funding is expected from the Vincent Thomas Toll Revenue Account.	
(4) To date, \$645 million has been transferred from the SHA to the TBSRP, including the full \$290 million transfer scheduled by the CTC to occur in 2005-06. An additional \$100 million has been expended directly from the account.	
(5) To date, \$90 million has been transferred from the PTA to the TBSRP, including the full \$80 million transfer scheduled by the CTC to occur in 2005-06. Approximately \$40 million remains to be transferred. Caltrans anticipates transfer of such balance in 2006-07 as directed by the CTC.	
(6) To date, \$2 million has been transferred from the SHA to the TBSRP, representing the commitment of "Efficiency Savings" for 2005-06 identified under AB 144. Approximately \$128 million remains to be distributed as scheduled by the CTC.	

Program Financing

As discussed above, AB 144 consolidated the administration of all toll revenues collected on the state-owned Bay Area toll bridges and financing of the TBSRP under the jurisdiction of BATA. BATA has direct programmatic responsibilities for the administration of all toll revenues collected on the state-owned bridges in the Bay Area and responsibilities for financial management of the TBSRP program, including:

- Administrative responsibility for collection and accounting of all toll revenues
- Authorization to increase tolls on the state-owned bridges by \$1.00, effective no sooner than January 1, 2007
- Project level toll setting authority as necessary to cover additional cost increases beyond the funded program contingency in order to complete the TBSRP
- Assumption of funding all of the roadway and bridge structure maintenance from Caltrans once bridge seismic retrofit projects are completed

In accordance with its responsibilities provided under the law, in September 2005, BATA adopted a finance plan for the TBSRP. The major components of the finance plan include:

- Issuing \$6.2 billion in debt, including defeasance of \$1.5 billion in outstanding State Infrastructure Bank bonds and commercial paper
- Increasing tolls on the state-owned bridges by \$1.00, (from \$3.00 to \$4.00 for two-axle vehicles), effective January 1, 2007
- Securing the maximum amount of state funding early in the construction schedule to most efficiently use toll funds (see discussion below concerning the CTC funding schedule)

- Locking in current interest rates to the extent possible in order to improve the chances that the entire toll program construction and the operations and maintenance can be delivered within the \$4.00 auto toll level

In September 2005, BATA approved a Finance Plan for the TBSRP and other toll bridge improvement programs dependent on toll revenues from the state-owned bridges. The finance plan called for \$6.2 billion in new debt issuances, including defeasance of the existing outstanding I-Bank bonds. Consistent with the finance plan, in December 2005, BATA approved the issuance of up to \$1.0 billion of 2006 toll bridge revenue bonds in February 2006. The bond issuance will provide adequate cashflow to fund the SAS contract for the East Span Replacement project, which was awarded on May 3, 2006.

Furthermore, in March 2006, BATA approved the issuance of \$1.2 billion in bonds to defease the I-Bank bonds approved in October 2005. Additionally, pursuant to the law, BATA held two public hearings, one in October and one in November 2005, to receive public testimony regarding the proposed \$1.00 seismic surcharge toll increase beginning on January 1, 2007 on the state-owned toll bridges in the Bay Area. BATA approved the toll increase on January 25, 2006.

Pursuant to AB 144, on September 29, 2005, the CTC adopted a schedule - revised in December 2005 - for the transfer of state funds to BATA to fund the TBSRP. The schedule contains the timing and sources of the state contributions, which begin in Fiscal Year (FY) 2005-06 and distributes the contributions over the years of project construction to ensure a timely balance between state sources and the contributions from toll funds. In December 2005, the CTC re-adopted the schedule to reflect opportunities to maximize the use of available PTA funds and correct prior transfer transactions. The CTC's December 2005 revised schedule for the transfer of funds allows BATA to pledge the state fund contribution to the financing of the TBSRP per

BATA's adopted finance plan. The CTC schedule is included in Appendix C.

In July 2006, BATA approved the establishment of a Joint Power Authority (JPA) consisting of the Metropolitan Transportation Commission (MTC) and BATA for the financing of the payment contributions from the CTC schedule. The JPA is named the Bay Area Infrastructure Financing Authority (BAIFA). In September 2006, BAIFA approved the issuance of \$1.1 billion in State Payment Acceleration Notes (SPAN) to finance the state contributions as outlined in the CTC schedule included in Appendix C to this report.

In December 2006, BATA issued \$972.3 million SPAN's secured by state funds in accordance with the schedule adopted by the CTC in 2005. The note proceeds will provide cashflow to fund the TBSRP.

Project Status

Completed Projects

Seismic retrofit and project close-out has been completed on the Benicia-Martinez, Carquinez, San Mateo-Hayward, Richmond-San Rafael, Vincent Thomas, San Diego-Coronado toll bridges and on the west span of the SFOBB. See *Table 8-Cost Comparison AB 144/SB 66, First Quarter 2007 Forecast and Expenditures through March 2007 for Completed Bridges*. As discussed above, the Richmond-San Rafael Bridge project expenditures have not been completely closed because Caltrans is in discussions with regulatory agencies regarding potential mitigations for impacts on fish in the project area.

To be updated

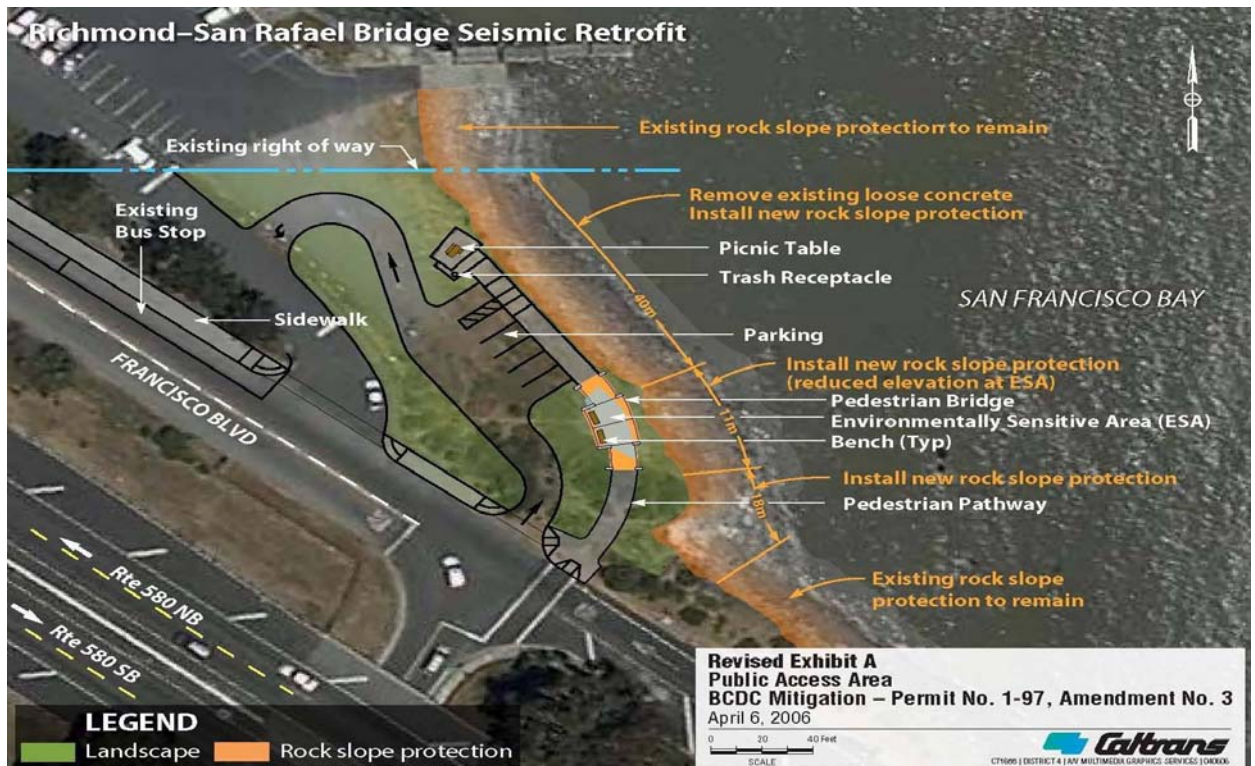
Table 8-Cost Comparison AB 144/ SB 66, Fourth Quarter 2006 Forecast and Expenditures through December 31, 2006 for Completed Bridges (\$ million)

Project	AB 144/ SB 66 Budget	Approved Changes	Current Approved Budget	Cost To Date (09/2006)	4th Quarter 2006 Forecast	Variance
a	b	c	d = b + c	e	f	g = f - d
San Francisco-Oakland Bay Bridge West Span Seismic Retrofit Project	307.9	-	307.9	301.0	307.9	-
Carquinez Bridge Retrofit Project	114.2	-	114.2	114.2	114.2	-
Benicia-Martinez Bridge Retrofit Project	177.8	-	177.8	177.8	177.8	-
San Mateo-Hayward Bridge Retrofit Project	163.5	-	163.5	163.4	163.5	-
Richmond-San Rafael Bridge Retrofit Project	914.0	(89.0)	825.0	789.3	825.0	-
Vincent Thomas Bridge Retrofit Project	58.5	-	58.5	58.4	58.5	-
San Diego-Coronado Bridge Retrofit Project	103.5	-	103.5	102.6	103.5	-
TOTAL	1839.4	(89.0)	1,750.4	1,706.7	1,750.4	-

Note: Details may not sum to totals due to rounding effects. Capital Outlay Support and Capital Outlay have been combined. Although seismic retrofit of the Richmond-San Rafael and San Diego-Coronado bridges are complete, environmental mitigation/monitoring work is still ongoing.

Caltrans has issued for advertisement the project plans and specifications for a public access lot on the Marin side of the Richmond-San Rafael bridge to comply with a Bay Conservation and Development Commission (BCDC) permit condition. The Richmond-San Rafael Public Access Project will provide public access to the Bay shoreline at the north end of the Richmond-San Rafael Bridge in Marin County. The project includes a six-car parking area, a ten-foot wide shoreline trail and pedestrian bridge, picnic tables and benches. In addition, new rock slope protection will be placed at the bay shore to protect against erosion, and drought tolerant landscaping will be planted to enhance the overall appearance of the project. The planting will be irrigated with an automatic irrigation system. The project will allow immediate access to the shoreline for motorists, bicyclists, and pedestrians to enjoy walking, picnicking, fishing, and the picturesque views across the Bay. All permits from other public

agencies including the U. S. Army Corps of Engineers have been secured. A Letter of Concurrence has been received from the National Oceanic and Atmospheric Administration (NOAA) Fisheries Service. This project was advertised on October 2, 2006, and bids were opened on November 1, 2006. To close out the Richmond-San Rafael Seismic Retrofit Project, Caltrans faces potential exposures concerning the environmental mitigation for negative impacts on fish, which is currently being discussed with regulatory agencies. Final savings for the Richmond-San Rafael Bridge project will be based on the resolution of pending negotiations with environmental permitting agencies regarding the cost of pile driving mitigation. The project cost savings in the amount of \$89 million has been transferred to the Toll Bridge Seismic Retrofit Program Contingency, as directed by the TBPOC.



Ongoing Construction Projects

SFOBB West Approach

The SFOBB west approach seismic retrofit project will remove and replace the west approach to the SFOBB, which includes all of the westbound mainline and most of the eastbound mainline from 4th Street to the SFOBB west anchorage, and all of the connecting entrance and exit ramps in downtown San Francisco. The construction work, which began in June 2003, is approximately 77 percent complete. Completion of this project is scheduled for 2009.

Upon completion of the retrofit project, the west approach mainline and ramps will have the same number of traffic lanes as before, but with improved highway geometrics. The mainline eastbound and westbound structures will be adjacent to each other at 4th Street and transition to a double-deck configuration with their own independent support system from Rincon Hill to the anchorage in order to tie into the existing SFOBB.

Milestones Achieved

The San Francisco-Oakland Bay Bridge (SFOBB) West Approach Project is 77 percent complete as of March 20, 2007 and is on schedule to finish in August 2009. Seismic retrofit construction continues with Frame 8U achieving a significant milestone by having both the north and south sections transversely stressed together into one structural unit. Major ongoing work during the quarter includes the continuation of work on the 5th Street and Harrison Street ramps, the 4th Street retrofit work and the interim eastbound detour (the ST6D alignment) where the Eastbound (EB) lower deck traffic was switched on to the temporary ST6D EB alignment on March 27, 2007. The next major phase is the demolition of the final 3000-foot section of the old I-80 freeway structure from 2nd street (near the Historic Clocktower) to 4th street. This demolition has a compressed schedule from the

as-planned 110 days down to 17 days and has been implemented in order to minimize impacts and inconvenience to the local residents and businesses. An extensive public outreach will begin well in advance of this work and include all of the upcoming impacts from future activities.

Project Funding

The AB 144/SB 66 baseline budget totals \$429 million for the project with \$309 million for CO and \$120 million for COS. See *Table 9-Baseline and Estimated Budget Need for SFOBB West Approach*

Table 9-Baseline and Estimated Budget Need for SFOBB West Approach (\$ million)

	AB 144/ SB 66 Budget	4th Quarter 2006 Forecast	Difference
COS	120.0	120.0	-
CO	309.0	309.0	-
Total	429.0	429.0	-

Major Risk Issues

Caltrans' west approach Risk Response Team is continuing with its efforts to manage project risks. Updated risk assessments have been regularly performed during the First Quarter as a standard project management practice.

Lessons learned to this point in the project continue to be important aspects of the implementation plans designed to mitigate risk:

- The aggressive informational campaigns have proven successful in keeping the public fully informed of upcoming demolition operations that would affect traffic, thereby mitigating adverse public perception. Regional and local information campaigns will be launched during spring 2007 to proactively address public concerns related to upcoming work on the interim eastbound detour and subsequent demolition work.
- Equipment and labor resources were increased during low traffic times such as nights and weekends. This strategy reduced inconveniences to the surrounding residents and businesses and minimized impact to the regional motorists while maintaining the level of production required for the project to remain on the target schedule.
- A high-priority risk issue currently being addressed by Caltrans concerns investigation and testing for the identification of pile anomalies that must be completed timely so as to avoid construction impact. To respond to this risk, Caltrans Construction coordinates closely with Structure Design and METS daily on pile investigation and testing issues, and proactively monitors this effort. Tracking of the testing effort is done at the individual pile level of detail. Team participation in Risk Management meetings has proven to be valuable in addressing this issue.

SFOBB East Span Seismic Replacement

The SFOBB East Span Seismic Replacement project will be seismically retrofitted through the complete replacement of the existing span. The project includes construction of the Skyway portion of the bridge (See *SFOBB East Span Replacement Project* picture below), which consists of two parallel concrete structures, each approximately 1.3 miles in length; an SAS bridge consisting of a 510-foot tower supporting a bridge deck connecting the Skyway bridge to YBI, transition structures on YBI and on the east end of the bridge connecting to the toll plaza area, and demolition of the existing east span. The SFOBB east span project now consists of 19 contracts. Note that the east end connection to the toll plaza, also known as the OTD contract, was split into four contracts by the TBPOC to facilitate construction flow. Splitting this contract will remove elements of the OTD construction from the critical path for completion of the new east span. Also, the YBITS contract will be split in the future into three contracts for reasons discussed below.

The current 21 SFOBB east span contracts are identified below:

Eight contracts are **complete**:

- Interim Retrofit (Existing Bridge)
- East Span Retrofit (Existing Bridge)
- Pile Installation Demonstration
- OTD Geofill
- YBI Archaeology
- United State Coast Guard (USCG) Road Relocation on YBI

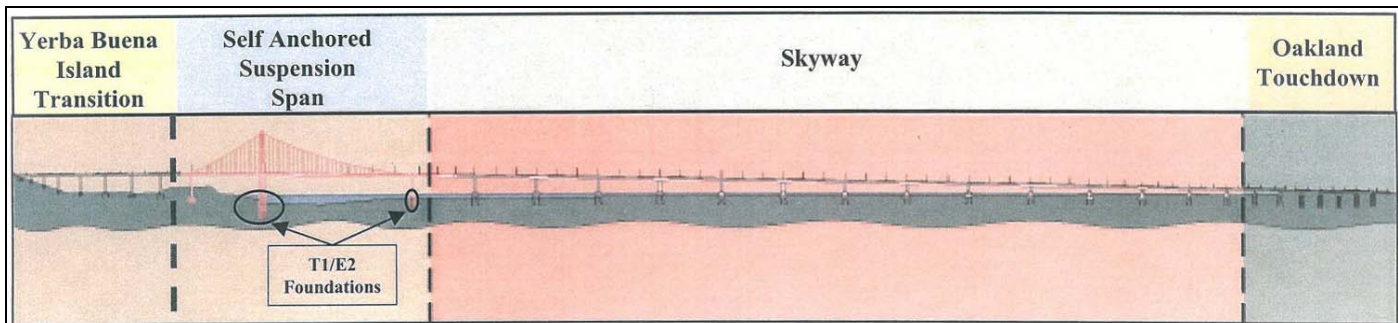
- SAS Land Foundations (W2)
- YBI Electrical Substation

Six contracts are under **construction**: Note that percent complete figures for construction contracts are based on actual payments made divided by the contract amount.

- Skyway contract (94 percent complete)
- South/South Detour (49 percent complete)
- SAS Marine Foundations (E2/T1) (71 percent complete)
- SAS (18 percent complete)
- Stormwater Treatment Measures (61 percent complete)
- 25KV Submarine Cable (0% percent complete)

Seven contracts are in **design**:

- OTD #1 contract: The contract was advertised on February 26, 2007 with bid opening scheduled for June 5 2007.
- OTD #2 contract: The contract is planned to be advertised in summer 2010.
- OTD portions of the corridor electrical contract: This scope may be executed as a separate contract, or alternatively, may be included within OTD #2 contract and/or the other contracts within the east span corridor.
- YBITS #1 (design 80 percent complete to date)
- YBITS #2 (design 80 percent complete to date)
- YBITS #3 contract
- Existing Bridge Demolition design (ten percent complete to date)



SFOBB East Span Replacement Project

The forecast completion date as compared to the AB 144/SB 66 baseline completion date for each of the major components of the SFOBB East Span Seismic Replacement project is shown in *Table 10-SFOBB East Span Seismic Replacement Project Schedule Summary* below.

The approved east span opening date has been delayed by 12 months due to the TBPOC approval and Caltrans' issuance of Addenda #5 and #7 to the SAS contract. Note that Addendum #7 provided for an early completion incentive that has the potential for reducing the SAS contract duration by six months; this would likewise reduce the overall east span corridor schedule by six months if achievement of the incentive is successful.

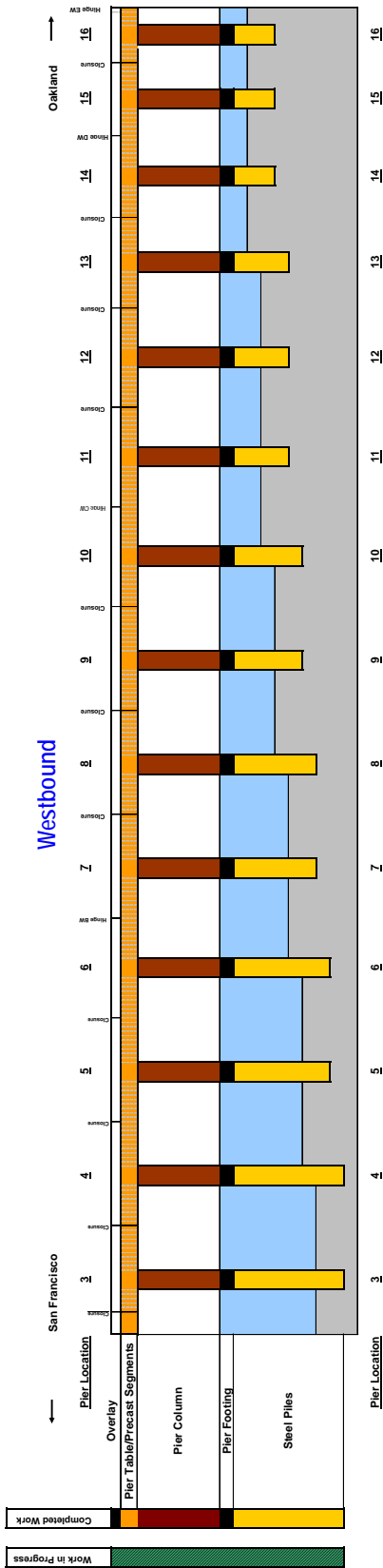
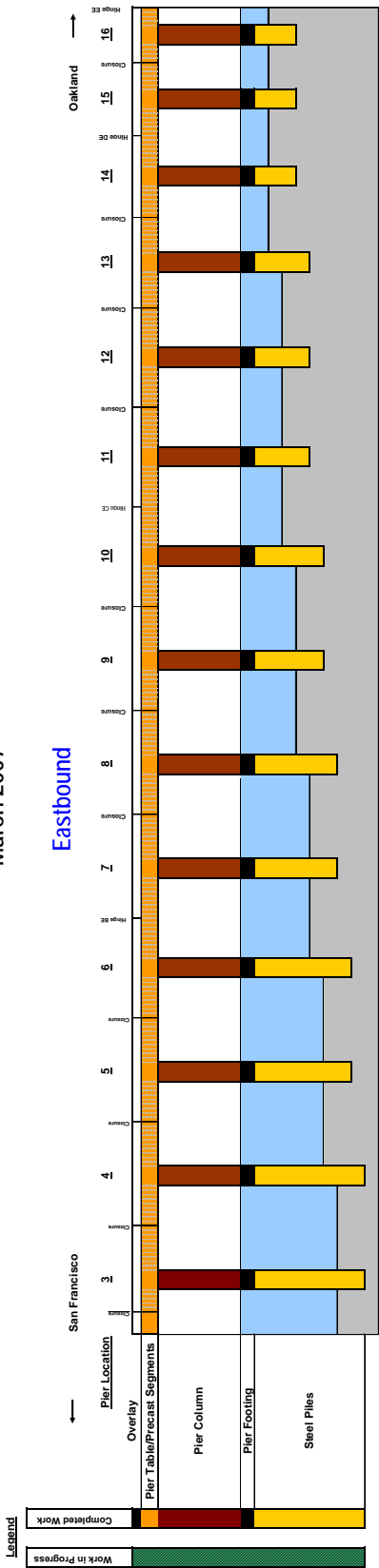
The completion of the Skyway contract has been revised from April 2007 to December 2007 as approved by the TBPOC due to a Contract Change Order executed with the Contractor that resolves a variety of construction issues. This change in this contract's completion date will not delay the open-to-traffic for the new east span. The schedule for the YBI SSD contract has been affected by the 12-month change to the SAS contract schedule. This delay is not expected to impact the new east span open-to-traffic date.

**Table 10-SFOBB East Span Seismic Replacement Project
Schedule Summary**

Contract	AB 144/SB 66 Baseline Pro	Approved Changes	Current Approved Schedule	3rd Quarter 2006 Forecast Project Completion Date	Variance (Months)
Skyway	Apr-07	8	Dec-07	Dec-07	-
YBI South / South Detour	Jul-07	-	Jun-10	Jun-10	-
Stormwater Treatment Measures	Mar-08	-	Mar-08	Jun-07	(9)
SAS E2/T1 Foundations	Jun-08	(3)	Mar-08	Mar-08	TBD
Open to Traffic: Westbound	Sep-11	12	Sep-12	Sep-12	-
SAS Superstructure	Mar-12	12	Mar-13	Mar-13	-
Open to Traffic: Eastbound	Sep-12	12	Sep-13	Sep-13	-
Oakland Touchdown	Nov-13	12	Nov-14	Nov-14	-
◆ OTD Submarine Cable	N/A		Jan-08	Jan-08	-
◆ OTD Westbound	N/A		Jul-09	Oct-09	3
◆ OTD Eastbound	N/A		Nov-14	Nov-14	-
YBI Transition Structures	Nov-13	12	Nov-14	Nov-14	-
Existing Bridge Demolition	Sep-14	12	Sep-15	Sep-15	-

Note: The new east span forecast to be fully open to traffic in September 2013. Construction activities will continue beyond that date to complete the project, including demolition of the existing structure.

San Francisco-Oakland Bay Bridge East Span Replacement Project - Skyway Contract
March 2007



Milestones Achieved – East Span Contracts

- The Skyway contract is 94 percent complete as of **March 2007**. The foundation work is complete including the installation of the fenders around six of the pier footings. The eastbound and westbound structures are 100 percent complete with the erection of all 452 segments (refer to diagram on page 23). **The final closure pour was completed in February, 2007.**
- An overall settlement has been reached with the Contractor to resolve all cost and schedule impacts posed by claims related to hinge pipe beam fabrication, service platforms, electrical appurtenances, polyester concrete overlay, modular joints and other tasks to be completed **that were known as of August 1, 2006**. A time extension of 220 working days, extending the project completion date to December 2007 has been approved by the TBPOC. The change in schedule to the Skyway contract will not delay the open-to-traffic date for the new East Span project, nor will this settlement negatively impact the overall budget for the Skyway contract or the project. Various Notices of Potential Change (NOPC's) have been issued by the Contractor on behalf of their Steel Orthotropic Box Girder (SOBG) fabrication subcontractor concerning issues related to that work scope that has been completed. All of these NOPC's have been recommended to be heard by the Dispute Review Board.
- The E2/T1 contract is **71** percent complete as of **March 2007**. At the East Pier (E2), foundation pile driving has been completed. E2 footing frames are now being welded to the piles. At the Tower Pier (T1), all steel foundation casings have been fabricated. Work is now progressing on installation of the casings and rock sockets. Fabrication of the T1 footing box **was completed in Texas, and was delivered and installed at the project site on March 17, 2007.**
- Caltrans is addressing risks posed by potentially differing site conditions at the Tower Pier rock socket through lessons-learned at the Benicia-Martinez Bridge. This information has been gained through substantial foundation exploration performed during design, and through the use of a conservative design, which may allow for variations during pile construction. Risks associated with potential differing site conditions at the Tower Pier casings are also being addressed through data gained from foundation exploration, use of a conservative design and flexibility in the casing installation sequence.
- The SFOBB East Span Seismic Replacement Project SAS Superstructure contract is **18** percent complete, based on payments to the Contractor, as of **March 2007**. The Contractor is mobilizing staff to the field office on Pier 7 in Oakland. Development of various administrative submittals, including the baseline schedule, is continuing. A final baseline schedule **has been submitted by the** Contractor. The Contractor is finalizing agreements with various manufacturers, fabricators, suppliers and subcontractors, including with Zhenhua Port Machinery Company (ZPMC), of Shanghai, China, to supply and fabricate all the major steel structures in the SAS. Caltrans is working to set up facilities and to organize resources in China that will ensure an effective Owner's presence in the steel fabrication shops operated by ZPMC. Caltrans is also taking risk mitigation measures to address potential issues during construction due to structural steel plate conflicts and welding methods.
- The Stormwater Treatment Measures contract is **61** percent complete as of **March 2007**. The current schedule forecast reflecting an earlier completion date than the approved schedule is due to the combination of an early contract award date and the shorter construction duration bid by the Contractor. Work continues on installation of drainage structures, installation of ductile iron pipe, and installation of pump

stations. Work on the bioretention basins has started. The Stormwater Project was required as part of the environmental mitigation package for the SFOBB Seismic Safety Project by the Regional Water Quality Control Board. The Stormwater Project will reduce the concentration of stormwater runoff pollutants including industrial chemicals, asbestos from brake pads, hydrocarbons, and heavy metals, from entering into the adjacent Emeryville Crescent. The Emeryville Crescent is a 558-acre tidal marsh and cove that supports up to 14,000 shorebirds and thousands of other birds, including the endangered clapper rail which nests and forages in the vegetative cover of the marsh. This area has been described as supporting the largest number of shorebird species regularly occurring at one place within San Francisco Bay (Bodega Bay Institute, 1978). The Stormwater Project will provide water treatment of at least 85% of the average annual runoff from a 155-acre shed area in the vicinity of the SFOBB Toll Plaza. By removing toxins from the SFOBB runoff, Caltrans will enhance the habitat quality of the Emeryville Crescent and by extension, the San Francisco Bay.

- Design on the Existing Bridge Demolition contract is ten percent complete. Design work has been temporarily suspended to assign



Concrete Apron for Drainage System: Stormwater Treatment Measure Contract

engineering resources to higher priority tasks, and will resume at a later time. The contract schedule completion date has been extended by 12 months due to a 12-month SAS contract extension. It should be noted that there are continued efforts to explore accelerating when traffic can be placed on the final structures.

Yerba Buena Island Contracts

- For the Yerba Buena Island South-South Detour (SSD) contract, Caltrans and its consultants have assumed design responsibilities from the Contractor for the design of the East and West tie-ins from the existing bridge and tunnel to the detour structure. The construction suspension of the tie-ins was lifted effective January 12, 2007. Completion of their design is being managed by Caltrans and is to be completed in conjunction with the SAS schedule to minimize impacts to the traveling public. The suspension of the tie-in work has necessitated additional design enhancements to the viaduct segment of the detour to allow it to stand in place alone for a longer duration to allow it to be connected to the East tie-in. The viaduct segment is being fabricated in South Korea.
- The YBITS #1 contract will construct structures necessary to connect the new SAS to the existing YBI tunnel. To minimize schedule and construction risk, TBPOC approved the option to accelerate portions of YBITS #1 work, including shifting critical path work to the SSD contractor. The YBITS foundation work was added to the SSD contract because foundation work is always the highest risk element of structure construction. Early construction of the foundations would significantly reduce risk to the east span corridor schedule. Preparation of final PS&E packages is currently underway. The decision on the accelerated work will impact design work on this contract.
- A need was identified to move quickly with work on pier W3L (which is part of the YBITS Advanced work) due to the SAS contractor

stating that they need access to that area of the YBI as early as end of March, 2007 to maintain the schedule of the SAS. The SSD contractor, CC Myers, completed that work and the SAS contractor has been granted access to that area ahead of schedule.

- The YBITS #2 contract includes demolition of the South/South Detour (SSD) temporary structure, completion of the new eastbound on-ramp, completion of the bike path section at YBI and reconstruction of local and affected facilities at YBI. Eastbound traffic will be placed on the new structure in this contract. The majority of the design work is complete. Preparation of detailed plans and quantity calculations are in progress. A decision on the SSD final design will impact design work on this contract.
- The YBITS #3 contract is for landscaping, and includes slope restoration, vegetation restoration and plant maintenance for the areas affected by YBI construction. A planting concept and preliminary plans have been developed for majority of the area. Determination of the extent of the U. S. Coast Guard area to be landscaped is still pending. Development of the final plans has not been completed.

section and roadway approach for the section that connects the new Skyway portion to the roadway west of the Oakland Toll Plaza. Design work is complete. PS&E were submitted to the Caltrans Office Engineer on September 1, 2006. This contract was advertised to the bidders on February 26, 2007 and contract completion is scheduled for October 2009. The contract will include workaround specification language to minimize risks from a delayed submarine cable contract.

- The OTD #2 contract includes construction of the remaining eastbound bridge section and roadway approach for the section that connects the new Skyway portion to the roadway west of the Oakland Toll Plaza. This work will occur once the westbound traffic is shifted onto the new SAS. Design work for the structures portion of the OTD #2 contract is complete. Design work on the roadway portion is ongoing.
- A fourth contract could incorporate most of the electrical elements from OTD, as well as from other segments of the east span into a single contract and is currently being scoped. The inclusion of this work into another existing contract (the OTD#2 contract is most likely) is also being considered.

Oakland Touchdown Contracts

- The OTD Submarine Cable contract will replace the existing submarine electrical cable from Oakland to Treasure Island. The cable relocation contract will place a new electrical cable(s) between the East Bay and Treasure Island because the existing electrical cable providing power to the island is close to foundation work necessary for the construction of the OTD #1 contract, which was advertised in February 2007. On January 11, 2007, Caltrans approved a contract with Manson Construction for the submarine cable contract. Notice to proceed was issued on February 6, 2007.
- The OTD #1 contract includes construction of all of the marine foundations, westbound bridge

Project Funding

Baseline and Projected Budget and Schedule

The AB 144/SB 66 baseline budget for the SFOBB east span is \$5. 486 billion with \$4. 527 billion for CO and \$959. 3 million for COS. This amount does not include program contingencies. See *Table 11-SFOBB East Span Replacement Cost Summary*.

The TBPOC re-evaluates project and contract cost forecasts continuously. The estimate-at-completion as of December 31, 2006, includes revised forecasts from AB 144/SB 66 budget, as follows:

- A forecast increase in the cost of COS to \$977. 1 million as a result of a detailed staffing and

consultant contract cost forecast completed as of the end of the First Quarter 2007. This forecast includes considerations of revised and increased construction contract schedules as mentioned elsewhere in this report that require coverage by staff and consultants.

- A forecasted \$13. 7 million increase for the SAS Superstructure contract to cover actions taken to encourage additional bidders for the project, including the bidder's stipend for the lowest three responsive bidders.
- A forecasted \$19. 2 million increase for the YBITS contract due to a higher estimate for electrical work and scheduling.
- A forecasted \$18. 7 million increase in the CO for the OTD contract due to an approved

To be updated

Table 11-SFOBB East Span Replacement Cost Summary (\$ Millions)

Contract	AB 144/ SB 66 Budget	Approved Changes	Current Approved Budget	Cost To Date (11/2006)	4 th Quarter 2006 Forecast	Variance
a	b	c	d = b + c	e	f	g = f - d
Capital Outlay Support	959.4	-	959.4	461.9	977.1	17.7
Capital Outlay	-	-	-			
Skyway	1,293.0	-	1,293.0	1,107.5	1,293.0	-
SAS Superstructure	1,753.7	-	1,753.7	187.2	313.5	-
SAS E2/T1 Foundations	313.5	-	313.5	211.2	1,767.4	13.7
YBI Transition Structures	299.3	-	299.3	36.6	152.2	20.3
Oakland Touchdown	283.8	-	283.8	-	318.5	19.2
◆ OTD Submarine Cable				-	302.5	18.7
◆ OTD Westbound				-	9.6	-
◆ OTD Eastbound				-	226.5	-
◆ OTD Electrical Systems				-	62.0	-
YBI South/South Detour	131.9	-	131.9	-	4.4	-
Existing Bridge Demolition	239.2	-	239.2	-	222.0	(17.2)
Stormwater Treatment Measures	15.0	-	15.0	4.4	15.0	-
East Span Completed Projects	90.3	-	90.3	88.6	90.3	-
Right-of-Way and Environmental Mitigation	72.4	-	72.4	38.8	72.4	-
Other Budgeted Capital	35.1	-	35.1	0.6	11.0	(24.1)
TOTAL	5,486.6	-	5,486.6	2,136.8	5,534.9	48.3

Note: Details may not sum to totals due to rounding effects.

Engineer's Estimate for the OTD #1 contract. The COS for the contract was also increased to cover the additional work to split the contract and to administer four separate contracts over a longer duration rather than the original single contract.

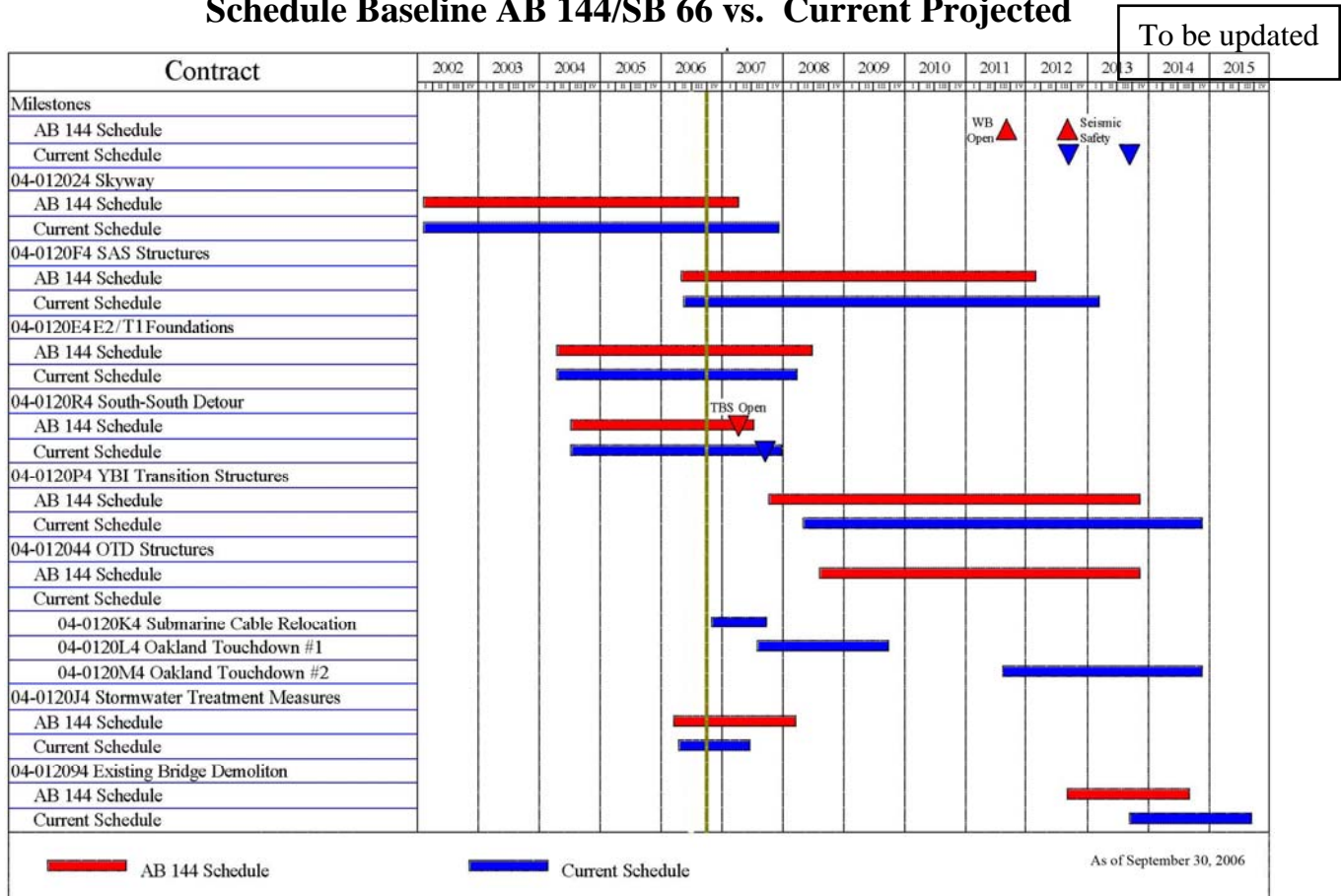
- A cost variance from the Current Approved Budget in the amount of \$20.3 million is forecast for the SSD contract due to issues related to a potential extension of the contract schedule to integrate it with the SAS contract schedule; the cost impact of possible risks associated with the roll-out of a portion of the existing bridge structure and the roll-in of a replacement span at the East tie-in; and the impact of potential risks related to the demolition of the existing structure.

- A forecast \$17.2 million decrease for the Bridge Demolition Contract due to a re-evaluation of the cost escalation rates for the project.

All of the variances discussed above can be funded from a combination of other budgeted capital and Toll Bridge Seismic Retrofit Program Contingency. The forecast for the SFOBB east span has increased by \$48.3 million to \$5.535 billion.

The AB 144/SB 66 baseline schedule for seismically retrofitting the structure and opening the bridge to traffic in both directions was 2012. However, the opening date has been revised to 2013 due to the TBPOC approval and Caltrans issuance of Addenda #5 and #7 to the SAS contract. The SAS Addendum #7 also provided for a six-month

**Chart 2-San Francisco-Oakland Bay Bridge East Span Corridor
Schedule Baseline AB 144/SB 66 vs. Current Projected**



early completion incentive; although the current schedule forecast does not reflect achievement of this incentive, schedule planning for the OTD and YBITS is being done so as to respond to this possibility. Other schedule impacts to the Skyway and YBI South-South Detour contracts have been discussed above.

The comparison of the AB 144/SB 66 baseline schedule and the current projected schedule is shown in *Chart 2-SFOBB East Span Corridor Schedule, Baseline AB 144/SB 66 vs. Current Projected*. It should be noted that the schedules shown in *Chart 2* do not at this time account for the potential “worst-case” issues that may affect the schedule identified in the SFOBB East Span Seismic Retrofit Project Risk Management Plan.

Major Risk Issues

SFOBB East Span Project Replacement Risk Management Plan

Caltrans continues to implement comprehensive risk management on all SFOBB East Span Seismic Replacement Project contracts in accordance with AB 144. Currently, Caltrans and BATA have embarked on an initiative to manage risk jointly. Risk response efforts continue to focus on encouraging responsive bids for future contracts and mitigating the estimated cost/schedule impact of identified risks.

Quarterly Environmental Compliance Highlights

SFOBB east span environmental tasks for the current quarter are focused on mitigation monitoring. All weekly, monthly, and annual compliance reports to resource agencies have been delivered on time with no comments from receiving agencies. Key successes this quarter include:

- Bird monitoring was conducted weekly in the active construction areas. American Peregrine falcon and California clapper rail

nest monitoring for the 2006/2007 nesting season began mid-December.

- Turbidity monitoring was conducted without incident during drilling and decanting at Pier T1.
- A marine mammal and hydroacoustic monitoring report covering activities during pile-driving at Piers E2 and T1 was submitted to NOAA-Fisheries on December 19, 2006.
- Monitoring for herring spawning activity within the project construction limits began on December and will continue through March 31 each year.
- Monitoring of the one-year eelgrass pilot program at the North Basin site was completed in July. The results of the monitoring were presented to the resources agencies on December 5, 2006. Caltrans is currently addressing issues and questions that came from the interagency meeting. It is hoped that approval will be received by February to conduct an additional year of monitoring before making a decision about the mitigation site.



View of the Western End of the Skyway Contract that will connect with the Future SAS Contract.

Other Toll Bridges

Dumbarton and Antioch Bridges

The original design of the Dumbarton and Antioch Bridges were based on design criteria developed after the 1971 San Fernando Earthquake. In the early 1990's, Caltrans determined that these two structures had the seismic resistant features required by the post 1971 codes and were not likely to be vulnerable during a major seismic event. Since that time, Caltrans has pursued an aggressive seismic research program, and based on the results of this program, significantly revised its seismic design practice in the late 1990's. Consistent with recommendations by the Caltrans Seismic Advisory Board, Caltrans regularly reassesses the seismic hazard and performance of its bridges. Due to the tremendous changes in seismic design practice that have occurred since the design of the Dumbarton and Antioch bridges, a comprehensive assessment of the potential need and scope for seismic retrofit based on current knowledge is planned.

Previous Reports

A number of limited studies have been made of these bridges in the past. However, none of the studies have fully assessed the seismic performance of the structures under current standards.

Vulnerability Studies

In late 2004, Caltrans initiated vulnerability studies on the Dumbarton and Antioch bridges. The purpose of these studies was to determine if the bridges would meet current seismic performance standards. The studies were essentially completed in May 2005. They were not a complete global analysis, but rather an investigation of selected bents modeled as independent structures. The analysis was limited in scope and based on as-built plans and currently available geotechnical information. The superstructure response was not analyzed.

The Dumbarton and Antioch Bridges have many seismic resistant features, and the results of the vulnerability studies indicate that the bridges should perform well in a moderate seismic event. However, during a major seismic event, some potential vulnerabilities (summarized below) become apparent.

- Foundation response generally governs performance. The piles may plunge axially and potentially cause permanent footing rotations.
- Potentially large foundation displacements and rotations may result in deformations that can't be easily repaired.
- The bent cap, pile cap, pile and superstructure are not capacity protected by the ductile columns and, as a result, these elements may be damaged in a major event, especially if the foundation is retrofitted.

Given the limitations of the studies, there was insufficient evidence to conclusively determine the performance of the bridges during a maximum credible earthquake (MCE). While the Dumbarton and Antioch bridges may meet performance standards, a more comprehensive technical study is necessary to understand the performance of these structures during an MCE event. A study of this level is necessary to accurately determine the structures' response and to develop any necessary retrofit strategies. A comprehensive geotechnical study using the latest analysis techniques is likely necessary in order to perform this level of analysis.

Sensitivity Analysis

As a follow-up to the Vulnerability Study, a sensitivity analysis was completed on a single representative bent used in the Vulnerability Study (Bent 23 of the Dumbarton Bridge). The goal of the analysis is to determine the structural response associated with uncertainties in the geotechnical data. An envelope of soil conditions (best-case and worst case scenarios) was used in the analysis. The results of the Sensitivity Analysis will be used to

determine the scope and value of conducting further geotechnical studies.

The preliminary results from the sensitivity analysis indicate that the seismic response of the bridge is largely dependant on the soil conditions and that a comprehensive geotechnical investigation is essential for understanding the bridge's performance during a major seismic event. A work plan was developed to assess the extent of geotechnical work needed for a complete seismic analysis and to assess the required performance levels for each structure. Caltrans has completed the value analysis to scope the geotechnical investigation which will be required to complete the strategy. The final report was issued on July 24, 2006.

Cost and Schedule

A preliminary cost estimate, schedule, and an initial risk analysis have been developed to complete a comprehensive seismic analysis for each bridge. The preliminary estimate and schedule were developed as a baseline assuming a complete geotechnical and geophysical investigation is required at each bridge.

At its June 14, 2006 meeting, BATA approved \$17.8 million in funding to proceed with this comprehensive seismic analysis. In September, 2006, BATA selected Earth Mechanics as the Consultant for the Phase 1 Geotechnical Investigation. BATA entered into a contract with the Consultant on September 26, 2006. It is expected that field work will commence in November 2006.



West Approach

Appendices

- A. TBSRP All Bridges AB 144/SB 66 Baseline Budget, Forecasts, and Expenditures through December 31, 2006 (A-1 and A-2).
- B. TBSRP East Span Only AB 144/SB 66 Baseline Budget, Forecasts, and Expenditures through December 31, 2006.
- C. CTC First Quarter Schedule.
- D. Project/Contract Photographs.

Appendix A-1.

To be updated

Toll Bridge Seismic Retrofit Program						
AB 144/SB 66 Baseline Budget, Forecasts, and Expenditures Through September 2006						
(\$ millions)						
Bridge	AB 144/SB 66 Baseline	TBPOC Current Approved Budget	2nd Quarter 2006 Forecast	3rd Quarter 2006 Forecast	Variance 3rd 2006 - 2nd 2006	Expenditures Through Sept. 2006
Benicia-Martinez						
Capital Outlay Support	38.1	38.1	38.1	38.1	-	38.1
Capital Outlay	139.7	139.7	139.7	139.7	-	139.7
Total	177.8	177.8	177.8	177.8	-	177.8
Carquinez						
Capital Outlay Support	28.7	28.7	28.7	28.7	-	28.8
Capital Outlay	85.5	85.5	85.5	85.5	-	85.4
Total	114.2	114.2	114.2	114.2	-	114.2
San Mateo-Hayward						
Capital Outlay Support	28.1	28.1	28.1	28.1	-	28.1
Capital Outlay	135.4	135.4	135.4	135.4	-	135.3
Total	163.5	163.5	163.5	163.5	-	163.4
Vincent Thomas						
Capital Outlay Support	16.4	16.4	16.4	16.4	-	16.4
Capital Outlay	42.1	42.1	42.1	42.1	-	42.0
Total	58.5	58.5	58.5	58.5	-	58.4
San Diego-Coronado						
Capital Outlay Support	33.5	33.5	33.5	33.5	-	33.2
Capital Outlay	70.0	70.0	70.0	70.0	-	69.4
Total	103.5	103.5	103.5	103.5	-	102.6
Richmond-San Rafael						
Capital Outlay Support	134.0	127.0	127.0	127.0	-	125.5
Capital Outlay	698.0	698.0	698.0	698.0	-	663.8
Richmond-San Rafael Project Reserves	82.0	-	-	-	-	-
Total	914.0	825.0	825.0	825.0	-	789.3
West Span Retrofit						
Capital Outlay Support	75.0	75.0	75.0	75.0	-	74.8
Capital Outlay	232.9	232.9	232.9	232.9	-	226.3
Total	307.9	307.9	307.9	307.9	-	301.1
West Approach						
Capital Outlay Support	120.0	120.0	120.0	120.0	-	83.6
Capital Outlay	309.0	309.0	309.0	309.0	-	212.5
Total	429.0	429.0	429.0	429.0	-	296.1
SFOBB East Span						
Capital Outlay Support	959.4	959.4	977.1	977.1	-	450.3
Capital Outlay	4,492.1	4,492.1	4,498.5	4,546.8	48.3	1,569.5
Other Budgeted Capital	35.1	35.1	11.0	11.0	-	1.5
Total	5,486.6	5,486.6	5,486.6	5,534.9	48.3	2,021.3
Program Indirect	30.0	30.0	30.0	30.0	-	24.7
Subtotal Capital Outlay Support	1,463.2	1,456.2	1,473.9	1,473.9	-	903.4
Subtotal Capital Outlay	6,321.8	6,239.8	6,222.1	6,270.4	48.3	3,145.4
Subtotal Toll Seismic Retrofit	7,785.0	7,696.0	7,696.0	7,744.3	48.3	4,048.8
Program Contingency	900.0	989.0	989.0	940.7	(48.3)	
Total Toll Seismic Retrofit Program	8,685.0	8,685.0	8,685.0	8,685.0	-	4,048.8

Notes:

* Budget for Richmond-San Rafael Bridge included \$16.9 million of deck joint rehabilitation work that considered to be eligible for seismic retrofit program funding.
(Due to the rounding of numbers, the totals above are show within \$0.02).

Appendix A-2.

To be updated

Toll Bridge Seismic Retrofit Program - SAS Alternative AB 144 Baseline Budget, Forecasts and Expenditures Through September 2006 (\$ millions) Column B Column C Column D Column E					
Bridge	AB 144/SB 66 Baseline	TBPOC Current Approved Budget See Note (3)	Expenditures to date and Encumbrances As of Sep 30, 2006 See Note (1)	Estimated Costs not yet Spent or Encumbered As of Sep 30, 2006	Total Forecast As of Sep 30, 2006 (Columns C + D)
Other Completed Projects					
Capital Outlay Support	144.9	144.9	144.6	0.3	144.9
Capital Outlay	472.6	472.6	473.1	(0.4)	472.7
Total	617.5	617.5	617.7	(0.1)	617.6
Richmond-San Rafael					
Capital Outlay Support	134.0	127.0	125.6	1.4	127.0
Capital Outlay	780.0	698.0	671.9	26.1	698.0
Total	914.0	825.0	797.5	27.5	825.0
West Span Retrofit					
Capital Outlay Support	75.0	75.0	74.8	0.2	75.0
Capital Outlay	232.9	232.9	234.2	(1.3)	232.9
Total	307.9	307.9	309.0	(1.1)	307.9
West Approach					
Capital Outlay Support	120.0	120.0	85.3	34.7	120.0
Capital Outlay	309.0	309.0	295.4	13.6	309.0
Total	429.0	429.0	380.7	48.3	429.0
SFOBB East Span -Skyway					
Capital Outlay Support	197.0	197.0	150.2	46.8	197.0
Capital Outlay	1,293.0	1,293.0	1,248.6	44.4	1,293.0
Total	1,490.0	1,490.0	1,398.8	91.2	1,490.0
SFOBB East Span -SAS- Superstructure					
Capital Outlay Support	214.6	214.6	29.6	185.0	214.6
Capital Outlay	1,753.7	1,753.7	1,647.6	119.8	1,767.4
Total	1,968.3	1,968.3	1,677.2	304.8	1,982.0
SFOBB East Span -SAS- Foundations					
Capital Outlay Support	62.5	62.5	24.9	37.6	62.5
Capital Outlay	339.9	339.9	304.3	35.6	339.9
Total	402.4	402.4	329.2	73.2	402.4
Small YBI Projects					
Capital Outlay Support	10.6	10.6	10.2	0.4	10.6
Capital Outlay	15.7	15.6	17.1	(1.4)	15.7
Total	26.3	26.2	27.3	(1.0)	26.3
South/South Detour					
Capital Outlay Support	29.5	29.5	16.7	12.8	29.5
Capital Outlay	131.9	131.9	97.0	55.2	152.2
Total	161.4	161.4	113.7	68.0	181.7
YBI - Transition Structures					
Capital Outlay Support	78.7	78.7	10.6	68.1	78.7
Capital Outlay	299.3	299.4	0.1	318.4	318.5
Total	378.0	378.1	10.7	386.5	397.2
Oakland Touchdown					
Capital Outlay Support	74.4	74.4	22.5	69.6	92.1
Capital Outlay	283.8	283.8	0.1	302.4	302.5
Total	358.2	358.2	22.6	372.0	394.6
East Span Other Small Project					
Capital Outlay Support	212.3	212.3	195.1	17.3	212.3
Capital Outlay	170.8	170.8	90.4	56.2	146.6
Total	383.1	383.1	285.5	73.5	358.9
Existing Bridge Demolition					
Capital Outlay Support	79.7	79.7	0.2	79.5	79.7
Capital Outlay	239.2	239.2	-	222.0	222.0
Total	318.9	318.9	0.2	301.5	301.7
Miscellaneous Program Costs					
	30.0	30.0	24.7	5.3	30.0
Total Capital Outlay Support (2)	1,463.2	1,456.2	915.0	558.9	1,473.9
Total Capital Outlay	6,321.8	6,239.8	5,079.8	1,190.6	6,270.4
Program Total	7,785.0	7,696.0	5,994.8	1,749.5	7,744.3

(1) Funds allocated to project or contract for Capital Outlay and Support needs includes Capital Outlay Support total allocation for FY 06/07.

(2) Total Capital Outlay Support includes Miscellaneous Program Costs.

(3) The TBPOC approved a budget reduction to the Richmond-San Rafael Project in October 2006 in the amount of \$89 million. See Appendix A-1.
(Due to the rounding of numbers, the totals above are shown within \$0.02).

Appendix B.

To be updated

Toll Bridge Seismic Retrofit Program - SFOBB East Span Only
AB 144/SB 66 Baseline Budget, Forecasts, and Expenditures Through September 2006

(\$ millions)						
East Span Contract	AB 144/SB 66 Baseline	TBPOC Current Approved Budget See Note (1)	2nd Quarter 2006 Forecast	3rd Quarter 2006 Forecast	Variance 3rd 2006- 2nd 2006	Expenditures Through September 2006
SFOBB East Span -Skyway						
Capital Outlay Support	197.0	197.0	197.0	197.0	-	147.7
Capital Outlay	1,293.0	1,293.0	1,293.0	1,293.0	-	1,092.4
Total	1,490.0	1,490.0	1,490.0	1,490.0	-	1,240.1
SFOBB East Span -SAS- Superstructure						
Capital Outlay Support	214.6	214.6	214.6	214.6	-	24.3
Capital Outlay	1,753.7	1,753.7	1,767.3	1,767.4	0.1	141.2
Total	1,968.3	1,968.3	1,981.9	1,982.0	0.1	165.5
SFOBB East Span -SAS- W2 Foundations						
Capital Outlay Support	10.0	10.0	10.0	10.0	-	9.2
Capital Outlay	26.4	26.4	26.4	26.4	-	25.8
Total	36.4	36.4	36.4	36.4	-	35.0
SFOBB East Span -SAS- E2/T1 Foundations						
Capital Outlay Support	52.5	52.5	52.5	52.5	-	14.5
Capital Outlay	313.5	313.5	313.5	313.5	-	169.2
Total	366.0	366.0	366.0	366.0	-	183.7
YBI/SAS (Archeology)						
Capital Outlay Support	1.1	1.1	1.1	1.1	-	1.1
Capital Outlay	1.1	1.1	1.1	1.1	-	1.1
Total	2.2	2.2	2.2	2.2	-	2.2
YBI - USCG Rd Relocation						
Capital Outlay Support	3.0	3.0	3.0	3.0	-	2.7
Capital Outlay	3.0	3.0	3.0	3.0	-	2.8
Total	6.0	6.0	6.0	6.0	-	5.5
YBI - Substation & Viaduct						
Capital Outlay Support	6.5	6.5	6.5	6.5	-	6.4
Capital Outlay	11.6	11.6	11.6	11.6	-	11.3
Total	18.1	18.1	18.1	18.1	-	17.7
South/South Detour						
Capital Outlay Support	29.5	29.5	29.5	29.5	-	16.6
Capital Outlay	131.9	131.9	133.8	152.2	18.4	35.3
Total	161.4	161.4	163.3	181.7	18.4	51.9
YBI - Transition Structures						
Capital Outlay Support	78.7	78.7	78.7	78.7	-	10.6
Capital Outlay	299.3	299.3	318.5	318.5	-	-
Total	378.0	378.0	397.2	397.2	-	10.6
Oakland Touchdown (Total, including the following split contracts and prior-to-split expenses)						
Capital Outlay Support	74.4	74.4	92.1	92.1	-	22.1
Capital Outlay	283.8	283.8	272.7	302.5	29.8	-
Total	358.2	358.2	364.8	394.6	29.8	22.1
Oakland Touchdown Contract No. 1						
Capital Outlay Support	-	-	49.9	49.9	-	1.9
Capital Outlay	-	-	196.7	226.5	29.8	-
Total	-	-	246.6	276.4	29.8	1.9
Oakland Touchdown Contract No. 2						
Capital Outlay Support	-	-	15.8	15.8	-	0.2
Capital Outlay	-	-	62.0	62.0	-	-
Total	-	-	77.8	77.8	-	0.2

To be updated

Appendix B. (Cont'd.)

Toll Bridge Seismic Retrofit Program - SFOBB East Span Only
AB 144/SB 66 Baseline Budget, Forecasts, and Expenditures Through September 2006

(\$ millions)						
East Span Contract	AB 144/SB 66 Baseline	TBPOC Current Approved Budget See Note (1)	2nd Quarter 2006 Forecast	3rd Quarter 2006 Forecast	Variance 3rd 2006- 2nd 2006	Expenditures Through September 2006
Oakland Touchdown Electrical Systems						
Capital Outlay Support	-	-	1.4	1.4	-	-
Capital Outlay	-	-	4.4	4.4	-	-
Total	-	-	5.8	5.8	-	-
Oakland Touchdown Submarine Cable						
Capital Outlay Support	-	-	3.0	3.0	-	0.2
Capital Outlay	-	-	9.6	9.6	-	-
Total	-	-	12.6	12.6	-	0.2
Oakland Geofill						
Capital Outlay Support	2.5	2.5	2.5	2.5	-	2.5
Capital Outlay	8.2	8.2	8.2	8.2	-	8.2
Total	10.7	10.7	10.7	10.7	-	10.7
Pile Installation Demonstration Project						
Capital Outlay Support	1.8	1.8	1.8	1.8	-	1.8
Capital Outlay	9.2	9.2	9.2	9.2	-	9.2
Total	11.0	11.0	11.0	11.0	-	11.0
Existing Bridge Demolition						
Capital Outlay Support	79.7	79.7	79.7	79.7	-	0.2
Capital Outlay	239.2	239.2	222.0	222.0	-	-
Total	318.9	318.9	301.7	301.7	-	0.2
Stormwater Treatment Measures						
Capital Outlay Support	6.0	6.0	6.0	6.0	-	5.3
Capital Outlay	15.0	15.0	15.0	15.0	-	3.4
Total	21.0	21.0	21.0	21.0	-	8.7
Right-of-way and Environmental Mitigation						
Capital Outlay Support	-	-	-	-	-	-
Capital Outlay	72.4	72.4	72.4	72.4	-	38.8
Total	72.4	72.4	72.4	72.4	-	38.8
Sunk Cost - Existing East Span Retrofit						
Capital Outlay Support	39.5	39.5	39.5	39.5	-	39.5
Capital Outlay	30.8	30.8	30.8	30.8	-	30.8
Total	70.3	70.3	70.3	70.3	-	70.3
Environmental Phase (Expended)						
Capital Outlay Support	97.7	97.7	97.7	97.7	-	97.7
Project Expenditures, Pre-splits						
Capital Outlay Support	44.9	44.9	44.9	44.9	-	44.9
Non-project Specific Costs						
Capital Outlay Support	20.0	20.0	20.0	20.0	-	3.2
Subtotal East Span Capital Outlay Support	959.4	959.4	977.1	977.1	-	450.3
Subtotal East Span Capital Outlay and Sunk Costs	4,492.1	4,492.1	4,498.5	4,546.8	48.3	1,569.5
Other Budgeted Capital	35.1	35.1	11.0	11.0	-	1.5
Total SFOBB East Span	5,486.6	5,486.6	5,486.6	5,534.9	48.3	2,021.3

(1) The TBPOC approved a budget reduction to the Richmond-San Rafael Project in October 2006 in the amount of \$89 million. See Appendix A-1.
(Due to the rounding of numbers, the totals above are shown within \$0.02).

Appendix C.

CTC TBSRP Contributions, Adopted December 2005.

Schedule of Contributions to the Toll Bridge Seismic Retrofit Program (\$ million)

Source	Description	2005-06 (Actual)	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	Total
AB 1171	SHA	290									290
	PTA	80	40								120
	Highway Bridge Replacement and Rehabilitation (HBRR)	100	100	100	42						342
	Contingency				1	99	100	100	148		448
AB 144	SHA*	2	8				53	50	17		130
	Motor Vehicle Account (MVA)	75									75
	Spillover		125								125
	SHA**									300	300
	Total	547	273	100	43	99	153	150	165	300	1830

* Caltrans Efficiency Savings

** SFOBB East Span Demolition Cost

Appendix D.

Project/Contract Photographs.

SFOBB East Span Replacement Project

Skyway Contract



Preparation for the Orthotropic Box Girder (OBG)



Preparation of Erection Device (ED) for Westbound Orthotropic Tub Lift with Temp Tower



Moving the Self Launching Erection Device (SLED) onto 8W



Installing Hinge Pipe Beam (HPB) CW - South

Skyway Contract (cont'd.)



Lifting of Westbound OBG (one)



Construction of Pier Footing Fenders



Grinding of Eastbound Skyway Deck



Lifting of Westbound OBG (two)



View of Skyway Construction (one)



View of Skyway Construction (two)

Skyway Contract (cont'd.)



Cormorant Nesting Platform Installation



Westbound OBG



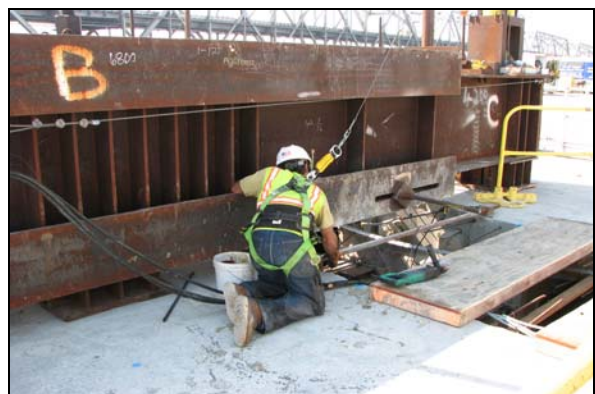
Bike Path Railing for the Eastbound Skyway



Closure Pour Span 5A



Closure Pour at OBG

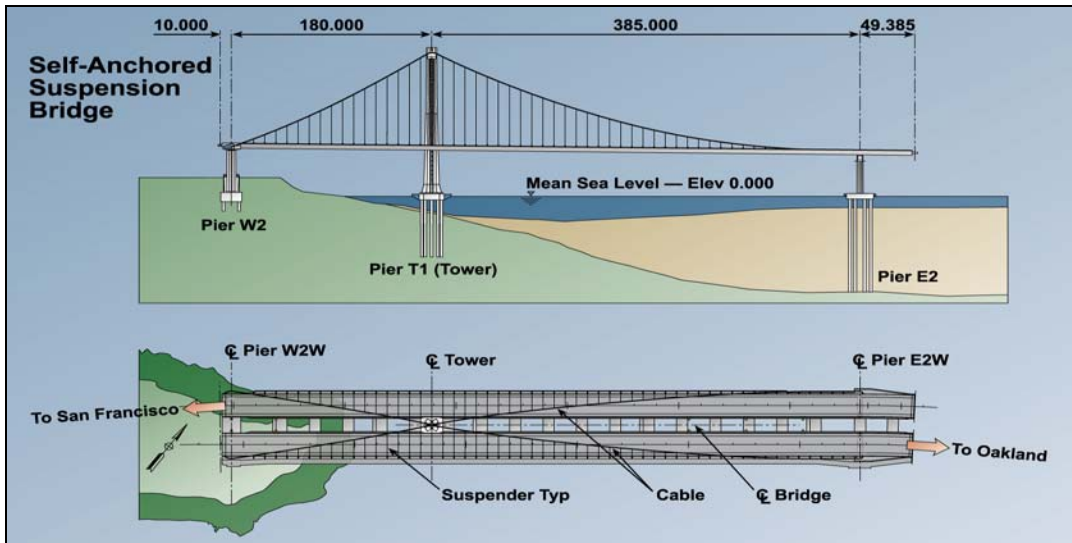


Jacking at Interior Closure Pour at Span 9

SAS Superstructure Contract



SAS Superstructure Artist Rendition



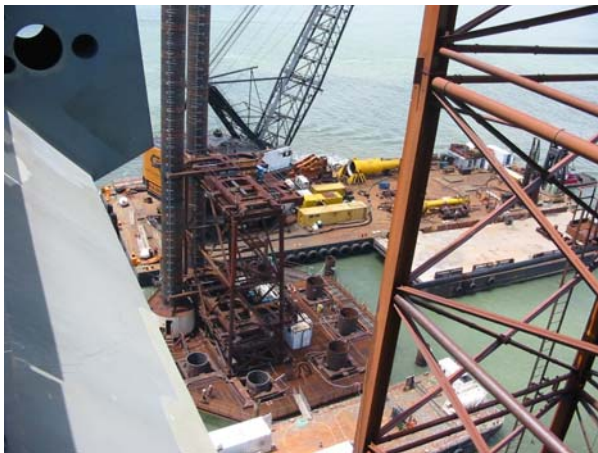
SAS E2/T1 Foundations Contract



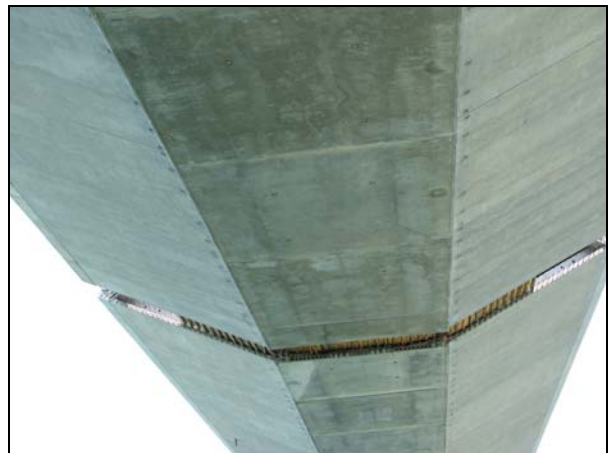
*T1 = Foundation for the 530-foot steel tower
E2 = Eastern Support of the suspension roadway
W2 = Western Support of the suspension roadway*



*View of the completed W2 pier columns at the YBI, which
will be the western support of the SAS structure*



Top Half of Piles Welded to Bottom Half at E2



Closure Pour

SAS E2/T1 Foundations Contract (cont'd.)



Pile Driving Operations at E2 (one)



Pile Driving Operations at E2 (two)



Cofferdam Frame for E2



Lifting the Pile Driving Hammer

YBI SSD Contract



Pier Column Construction for Bents 50 and 51



Footing and Pier Columns for Bent 48



Demobilization of the SSD construction equipment 4



East View from Bent 50



Demobilization of the SSD construction equipment 2

SFOBB West Approach Replacement Project



Frame 8U North



West Approach Project (one)



West Approach Project (two)

SFOBB West Approach Replacement Project (cont'd.)



West Approach Project – Labor Weekend Progress



West Approach 8U North (one)



West Approach 8U North (two)

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Memorandum

TO: Toll Bridge Program Oversight Committee (TBPOC) **DATE:** April 26, 2007

FR: Andrew Fremier, BATA Deputy Executive Director

RE: Agenda No. - 3c, 1
Progress Report
Item- First Quarter Report Ending March 31, 2007
Transmittal Letters

Cost:

N/A

Schedule Impacts:

N/A

Recommendation:

Approval

Discussion:

The Program Management Team has reviewed and requests TBPOC approval of the attached letters to the Legislature and California Transportation Commission transmitting the 2007 First Quarter "Toll Bridge Seismic Retrofit Program Report."

Attachments:

Letter to the Legislature

Letter to California Transportation Commission



TOLL BRIDGE PROGRAM OVERSIGHT COMMITTEE

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

Toll Bridge Program Oversight Committee
Department of Transportation
Office of the Director
1120 N Street
P.O. Box 942873
Sacramento, CA 94273-0001

May 15, 2007

Mr. Gregory Schmidt
Secretary of the Senate
State Capital, Room 3044
Sacramento, CA 95814

Mr. E Dotson Wilson
Chief Clerk of the Assembly
State Capital, Room 3196
Sacramento, CA 95814

Dear Messrs. Schmidt and Wilson:

The Toll Bridge Program Oversight Committee (TBPOC) is pleased to submit the 2007 First Quarter "Toll Bridge Seismic Retrofit Program Report," prepared pursuant to California Streets and Highways Code Section 30952.2. The First Quarter report includes project progress and activities for the Toll Bridge Seismic Retrofit Program through March 31, 2007.

California Streets and Highways Code Section 30952.1 established the TBPOC to exercise project oversight and control over the Toll Bridge Seismic Retrofit Program. The TBPOC is comprised of the Director of the Department of Transportation (Caltrans), the Executive Director of the Bay Area Toll Authority (BATA), and the Executive Director of the California Transportation Commission (CTC). The TBPOC's program oversight and control activities include review and approval of contract bid documents, review and resolution of project issues, evaluation and approval of project change orders and claims, and the issuance of monthly and quarterly program progress reports.

Gregory Schmidt
E Dotson Wilson
May 15, 2007
Page 2

The TBPOC is committed to providing the Legislature with comprehensive and timely reporting on the Toll Bridge Seismic Retrofit Program. If there are any questions or if any additional information is required, please do not hesitate to contact the members of the TBPOC.

Sincerely,

WILL KEMPTON
Director
California Department of
Transportation
Chair, TBPOC

JOHN F. BARNA, JR.
Executive Director
California Transportation Commission

STEVE HEMINGER
Executive Director
Bay Area Toll Authority



TOLL BRIDGE PROGRAM OVERSIGHT COMMITTEE

CALTRANS BAY AREA TOLL AUTHORITY CALIFORNIA TRANSPORTATION COMMISSION

Toll Bridge Program Oversight Committee
Department of Transportation
Office of the Director
1120 N Street
P.O. Box 942873
Sacramento, CA 94273-0001

May 15, 2007

Mr. James C. Ghilmetti, Chair
California Transportation Commission
1120 N Street, Room 2221
Sacramento, CA 95814

Mr. John Chalker, Vice-Chair
California Transportation Commission
1120 N Street, Room 2221
Sacramento, CA 95814

Dear Commissioners Ghilmetti and Chalker:

The Toll Bridge Program Oversight Committee (TBPOC) is pleased to submit the 2007 First Quarter "Toll Bridge Seismic Retrofit Program Report," prepared pursuant to California Streets and Highways Code Section 30952.2. The First Quarter report includes project progress and activities for the Toll Bridge Seismic Retrofit Program through March 31, 2007.

California Streets and Highways Code Section 30952.1 established the TBPOC to exercise project oversight and control over the Toll Bridge Seismic Retrofit Program. The TBPOC is comprised of the Director of the Department of Transportation (Caltrans), the Executive Director of the Bay Area Toll Authority (BATA), and the Executive Director of the California Transportation Commission (CTC). The TBPOC's program oversight and control activities include review and approval of contract bid documents, review and resolution of project issues, evaluation and approval of project change orders and claims, and the issuance of monthly and quarterly program progress reports.

James C. Ghilmetti
John Chalker
May 15, 2007
Page 2

The TBPOC is committed to providing the CTC with comprehensive and timely reporting on the Toll Bridge Seismic Retrofit Program. If there are any questions or if any additional information is required, please do not hesitate to contact the members of the TBPOC.

Sincerely,

WILL KEMPTON
Director
California Department of
Transportation
Chair, TBPOC

JOHN F. BARNA, JR.
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Memorandum

TO: Toll Bridge Program Oversight Committee **DATE:** April 26, 2007

FR: Tony Anziano, Toll Bridge Program Manager, Caltrans

RE: Agenda No. - 4a

Item- Program Issues
Richmond-San Rafael Bridge Seismic Retrofit Project
Authority to Negotiate with State of California Fish and Game

Cost:

Request to approve settlement authority in the amount of five million dollars (\$5,000,000) for settlement authority. The capital budget for the RSRB project has funds available for the requested authority.

Recommendation:

Approve settlement authority in the amount of five million dollars (\$5,000,000), allocated from the capital budget for the Richmond San Rafael Bridge Seismic Retrofit Project, for resolution of issues with the State of California Department of Fish and Game pertaining to the issuance of an Incidental Take Permit for the project under the California Endangered Species Act.

Discussion:

Background

In the past few years, several species of salmonids have been listed as threatened or endangered under the Federal Endangered Species Act (ESA) by the National Oceanic and Atmospheric Administration (NOAA) and by the California Department of Fish and Game (CDFG) under the California Endangered Species Act (CESA). Sacramento River Winter-Run Chinook salmon were listed as

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endangered under ESA and CESA in 1994. Central Valley Spring Run Chinook salmon were listed as threatened under ESA and CESA in 1999. The initial focus on potential impacts to these species related to water diversions and water quality. These impacts were readily quantifiable. Potential impacts from activities (such as pile driving) generating significant acoustic pressure waves had been discussed in the scientific community for some time but little research has been available and impacts were not initially quantifiable.

Construction of the Richmond San Rafael Bridge (RSRB) Seismic Retrofit Project began in late 2000. At about the same time, the Department initiated a research project to assess potential impacts to fish from pile driving activities associated with the San Francisco-Oakland Bay Bridge East Span Seismic Safety Project (East Span Project). The research was conducted as part of demonstration pile driving activities. Results of the research project were published in August 2001. The research indicated that pile driving generated acoustic pressure levels between 180 and 190 decibels resulted in mortality to some fish present in the area where such levels were reached. The research also indicated that acoustic pressure waves could be effectively reduced below the mortality threshold through the use of certain attenuation methods.

Construction of the new Benicia-Martinez Bridge (BMB) began in late 2001, shortly after release of this early research. At the time construction began on the RSRB and BMB projects, impacts to listed species of fish were unforeseen due to the relatively recent listing of the salmonid species and the lack of research on the impacts of pile driving. During pile driving activities for the BMB, dead fish were observed floating in the water. Several fish were retrieved and some of the dead fish were listed salmonids. The dead fish had injuries consistent with exposure to extreme pressure variations.

The BMB fish mortality was reported to CDFG and NOAA. CDFG immediately halted pile driving operations at BMB and the Department initiated consultation under ESA and CESA with NOAA and CDFG. Limited work was resumed on BMB during periods in which listed species were unlikely to be present (non-run periods). These limitations were subsequently lifted with the development of an

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effective attenuation system based on the East Span research. The Department agreed to work with NOAA and CDFG to develop appropriate mitigation for impacts occurring prior to the initial halt of pile driving activities.

Pile driving was ongoing for the RSRB at the time work was halted on the BMB. Due to the nature of the RSRB work (seismic safety) CDFG did not stop or limit pile driving at RSRB. The Department did agree to implement best practices where feasible to limit potential impacts. Similar to BMB, the Department also agreed to work with CDFG to develop appropriate mitigation for impacts. Dead fish were never observed during work on the RSRB project.

The Department subsequently agreed to a dollar figure for BMB mitigation, with the money being used to fund restoration of critical habitat for the involved listed species. No mitigation was ever agreed to for RSRB.

CDFG raised the issue of mitigation for alleged RSRB impacts in 2005. CDFG indicated that a mitigation fee in the range of fifteen to twenty million dollars would be required. CDFG based this figure on a theoretical model used to establish the number of fish killed due to pile driving, with the model applying a 190 decibel threshold for fish mortality. The Department raised concerns with the validity of the model and indicated that the Department could only support a mitigation fee in the range of six million dollars. The Department's assessment was based on an analysis using limited fixes to the more significant issues associated with the CDFG model.

CDFG and the Department were unable to reach resolution. In late 2006, the Secretaries of their respective supervising Agencies (Resources and Business, Transportation and Housing) directed that the dispute be referred to an independent "Blue Ribbon Panel" for an assessment of impacts to listed species.

An independent panel of experts was assembled and the panel released its report on February 27, 2007. The report was finalized after review by CDFG and the Department in March. The report concluded that an acoustic pressure level of 201 decibels was a more appropriate threshold of mortality as ongoing research

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was suggesting that mortality was actually occurring at levels in the range of 200-210 decibels, levels much higher than the initial threshold of 180-190 decibels suggested by early research. However, the panel concluded that an actual “scientific” assessment of impacts would be impossible, noting the lack of accurate data and problems associated with the model created by CDFG. The panel did suggest that certain survey data (fish counts) developed by the United States Fish and Wildlife Service might provide at least an order of magnitude of impacts that could be used to arrive at a “business decision” to resolve the mitigation issue.

A copy of the Blue Ribbon Panel report is attached.

Analysis

The mortality pressure level established by the Panel in and of itself establishes that the mitigation initially requested by CDFG is well in excess of a reasonable amount. If this level is applied to the model developed by CDFG, but using the survey data suggested by the Panel, the suggested mitigation amount is in the range of four to six million dollars (\$4,000,000-\$6,000,000), depending on whether the CDFG model is the original CDFG version or the Department’s “corrected” version.

CDFG’s position at this time is unknown. CDFG has always pointed out that the discussion to date has only involved mortality to juvenile fish populations and that some amount would have to be added for impacts to adult populations (the adult impacts was always assumed to be small relative to the juvenile impact). It is likely that CDFG will raise this again to push for a higher dollar figure. A mid-range figure appears appropriate for settlement discussions at this time.

The Department will require the issuance of an after-the-fact incidental take permit under CESA as part of any final settlement, unless it is demonstrated that there are actual legal obstacles to the issuance of the permit.



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The capital budget for the RSRB project has funds available for the requested authority.

Attachment(s):

Final Report Addressing Disputed Analysis and Impacts to Salmonids as a Result of the Richmond-San Rafael Bridge Seismic Retrofit Project, February 26, 2007

Final Report
Addressing Disputed Analysis and Impacts to Salmonids as a Result of the Richmond-San
Rafael Bridge Seismic Retrofit Project
Contra Costa County

Prepared for

Barry Sedlik, Acting Secretary
California Department of Business, Transportation, and Housing

Mike Chrisman, Secretary
Resource Agency

February 26, 2007

Prepared by

Panel Members:
Thomas J Carlson
Mardi C. Hastings
Mike Healey
Patrick J. Rutten

University of California:
Mary Madison
James F. Quinn

Meeting Facilitator
Carolyn Penny, UC Davis Extension
Common Ground: Center for Cooperative Solutions

Introduction

The following report addresses bioacoustic impacts to fish during the 2002-2004 seismic retrofit of the Richmond-San Rafael Bridge (RSRB) between Contra Costa and Marin Counties. Fatal injury to fish from bioacoustic sources as a result of bridge construction activities is a recent phenomenon that became an issue during the seismic retrofit project (SRP). The California Department of Transportation (Caltrans), which was the project proponent, began negotiations with California Department of Fish and Game (DFG), which was the state regulatory agency responsible for administering the California Endangered Species Act (CESA). The two agencies failed to reach agreement on the degree and severity of impacts to listed (threatened or endangered) salmonid species resulting from bridge construction. As a result, the issue was elevated for resolution to the Agency Secretary level which resulted in direction to the respective departments (Caltrans and DFG) to convene a Panel of specialists (Panel) to assist in finding a solution.

The charge of the Panel was to determine (1) the bioacoustic impacts to fish and appropriate mitigation for the construction of the RSRB and (2) the methodology for analyzing the bioacoustic impacts to fish in future transportation projects. Because each estimate of this type is unique to the circumstances of the individual project, and because data available for this particular analysis were extremely limited, this report also includes recommendations for improved data collection and modeling to promote more accurate estimates and allow involved agencies to better avoid and/or mitigate acoustic impacts in the future.

The Panel members, project sponsors (see below) and the authors emphasize that due to the short timeline and limited information available for this review, the resulting analysis should be viewed as supporting a business decision to determine acoustic impacts on fish for this project only and does not represent a rigorous scientific determination of impacts.

Background

After the Loma Prieta earthquake, Caltrans began seismic retrofits of the major Bay Area bridges. Because these were high priority public safety projects, they received categorical exemptions under the California Environmental Quality Act (CEQA). Three of the retrofits - the Bay Bridge, the Benicia-Martinez Bridge (BMB) and the RSRB - required extensive driving of additional underwater piles. After the retrofit process was underway, new scientific developments made Caltrans and biological regulators aware that exposure to high-energy sound waves (such as those created by driving piles) can cause acoustic trauma and/or barotrauma to marine species.

Acoustic trauma is injury to the hearing mechanisms within the inner ear caused by excessively loud noise, while barotrauma is injury resulting from failure to equalize pressure of a gas-containing space with that of the surrounding environment. When a fish is exposed to sound waves with rapid changes in pressure (both positive and negative), its swim bladder does not have time to equilibrate. Instead the swim bladder wall oscillates back and forth, pushing and pulling on the surrounding tissue and organs, which can cause barotraumas if the oscillations are too severe.

Because two state-listed endangered species (winter run and spring run Chinook salmon) passed through the vicinity of the pile driving, barotrauma could cause incidental take (immediate or delayed mortality), which must be permitted and fully mitigated under the CESA. As a result, Caltrans halted pile driving and commenced consultations with both the DFG and NOAA.

The parties determined that, within the context of public safety requirements to complete the retrofits, take of listed salmon juveniles could not be avoided, and the regulatory agencies agreed to allow construction to continue without the required incidental take permit if the project incorporated modifications in practices to minimize fish mortality and if Caltrans agreed to general terms of mitigation based on a similar project in the Bay Area. In particular, engineered solutions in the form of either open water or enclosed bubble curtains were deployed around some of the piles, and these were apparently effective in absorbing acoustic energy and attenuating harmful or fatal impacts on nearby fish. Unfortunately, these methods were not extensively used on the RSRB Seismic Retrofit Project (SRP), partly because the technology was evolving, and partly because it was difficult to deploy curtains around some existing structures.

All parties agreed that despite better practices, meaningful levels of juvenile fish mortality were inevitable, and therefore DFG required compensatory mitigation under the CESA. Caltrans and DFG reached a settlement for the BMB project, but disagreed on estimates for the RSRB. The issue was elevated to Department Director level and remained unresolved. Finally, the issue was elevated to the Agency Secretary level for resolution that included formation of a Panel to provide guidance on both how to resolve this disagreement and to develop recommendations to better estimate overall impacts for future aquatic and marine construction involving pile driving.

Overview of Process

On November 30, 2006, Business, Transportation, and Housing (BTH) Secretary Sunne Wright-McPeak and Resources Secretary Mike Chrisman agreed to convene a Panel of Experts (Panel) to determine (1) the bioacoustic impacts to fish and appropriate mitigation for the RSRB SRP and (2) the methodology for analyzing the bioacoustic impacts to fish for future transportation projects. The Panel was asked to issue a report of their findings within 90 days, or no later than February 26, 2007.

Kevin Hunting of DFG and Jay Norvell of Caltrans were charged with identifying and selecting Panel members, convening the Panel, and assuming overall project sponsor roles. Through existing cooperative agreements with the Information Center for the Environment (ICE) at the University of California at Davis, they asked the University of California to moderate the Panel meetings and to act as a neutral third party in facilitating the Panel's discussions. The University of California Extension's Common Ground: Center for Cooperative Solutions program was subcontracted to provide professional facilitation, and Common Ground Co-director Carolyn Penney acted as lead facilitator for the Panel with support from Professor Jim Quinn, Mary Madison and Kevin Ward from ICE.

Panel members were selected by the project sponsors based on familiarity with the overall history of the subject matter and their experience and expertise in either policy issue resolution

or knowledge of a particular aspect of the topics discussed. Four experts agreed to participate in the Panel:

Thomas J. Carlson, Chief Scientist, Battelle Pacific Northwest National Lab
Mardi C. Hastings, Sr. Scientist, Applied Research Lab, Pennsylvania State University
Mike Healey, Lead Scientist, California Bay-Delta Authority
Patrick J. Rutten, Southwest Regional Supervisor, National Marine Fisheries Service,
NOAA Restoration Center

The Panel met three times: January 18, 2007; January 30, 2007 and February 13, 2007. In addition to meeting, the Panel assembled an electronic library of supporting documentation and literature. The Panel also requested, received and examined copies of multiple datasets and spreadsheets provided by the agencies. Given the timeline and resources available, the Panel did not attempt to conduct independent analyses of the data or derive conclusions in a quantitative manner, except in re-examining the sound exposure threshold for barotrauma resulting in immediate or delayed mortality. This derivation is summarized below in the section, *Recommendation for Pile Driving Noise Exposure Criteria*.

Panel members, along with UC Davis personnel, agency technical staff, associated consultants and project sponsors attended the first and second meetings. Only UC Davis personnel, project sponsors and Panelists attended the third meeting (See attached attendee lists for each meeting, Appendix A).

The meetings were all held on the UC Davis Campus. The first two meetings were in the Buehler Alumni Center and the third was at the UC Davis Memorial Union. Meetings lasted all day, typically from 9 to 4, and included oral and electronic presentations. Data and documents for the Panel and agency staff were placed on a password-protected UC Davis File Transfer Protocol (FTP) site.

During the initial meeting, Panelists approved overall ground rules for their discussion. Agency staff and consultants provided an overview of various aspects of the project, including the science of pile driving, how fish data were collected, legal interpretations of CESA and other applicable statutes, fish biology, and how acoustic data were gathered (See attached agendas for meetings, Appendix B).

During the second meeting, Panelists met most of the day in closed session and invited technical staff and consultants to make separate presentations that included clarification of primary data sets, the exposure model used, how swimming speed was calculated and how threshold decibel levels were determined.

The Panel concluded the following at the January 30, 2007 meeting:

- 1) For RSRB-SRP, the Panel accepted the Chipps Island trawl data collected as the best available data for seasonal distribution of fish. The Panel report addresses the adequacy of those data.

- 2) For RSRB, the Panel accepted the Caltrans 6/10/05 report, particularly Appendix E, as the best available primary pile-driving data.
- 3) The Panel accepted the Illingworth & Rodkin noise monitoring data.
- 4) At this point, the Panel did not dissent from the 80/20 channel/shallows fish distribution assumption used by DFG in modeling impacts (the assumption is based on qualitative description – actual value is unknown)

During the third meeting on February 13th, the Panel met with project sponsors to review the Panel's charge and seek clarification regarding the Panel's final product. A resource economist presented information regarding the valuation of fiscal impacts using the Resource Equivalency Analysis method. Panelist Mardi Hastings presented information regarding acoustic impacts to fish and the current status of research in this area. She agreed to examine the implications of using a higher threshold in the existing DFG model and draft findings for the final report.

Panelist Mike Healey agreed to draft recommendations for appropriate model approaches to be used for estimating impacts in the future. Jim Quinn and Mary Madison agreed to draft language for the introduction and overview and to integrate the Panel's sections for overall review.

Approach

The Panel concluded that for all practical purposes, direct measurement of salmon mortality at the project site was not possible given current technology. Caltrans did monitor for dead fish during some of the pile driving sessions, but the number of directly observed dead fish was very low. The number killed, but not detected, could not be determined.

The agencies estimated juvenile salmon mortality from simple spreadsheet models based on salmon movement, the time course of pile driving and on estimates of the proportion of the areas around the bridges that would experience acoustic energies above a specified threshold level. The specifics of the calculations differed in part over varying assumptions regarding the appropriate threshold level (e.g., 190 vs. 208 dB¹ peak sound pressure level), fish movement speeds through the impact zone, and adjustment of the calculated exposure time to extended pauses in pile driving. Involved agencies stated they developed their estimates using what they thought were conservative assumptions (the "precautionary principle") to calculate an upper bound to the likely take, under CESA, of juvenile winter run and spring run Chinook salmon. (For purposes of this analysis and for this project, the agencies agreed that take should be limited to the direct or indirect mortality of juvenile salmon caused by barotrauma associated with pile driving.) Principal assumptions about exposure included:

- There is a threshold peak sound pressure level below which fish are not fatally harmed. Fish exposed to higher peak levels, even for a single strike, are assumed to be killed. The appropriate value for the assumed threshold was a source of disagreement, but both parties used 190 dB.

¹ All sound pressure levels (SPL) in this document are in decibels (dB) referenced to 1 microPascal (μPa). The formula used to calculate SPL in dB is $SPL = 20 \cdot \log(p/p_{ref})$ where 'log' is the base-10 logarithm, p is the pressure amplitude in Pa, and $p_{ref} = 1 \mu Pa$.

- For any given pile or class of piles, a radius around that pile may be calculated or estimated from sample measurements of sound pressure levels inside of which any fish will be exposed to a peak sound pressure level exceeding the threshold sometime during the duration of the pile driving event. Any fish inside that radius while pile driving is occurring is assumed to have experienced barotrauma.
- Fish experiencing barotrauma are assumed to die, eventually, as a direct result of the sound exposure.
- Fish move downstream past the bridge at a constant rate and are evenly dispersed in the water column and across the channel.

The agencies agreed these assumptions were necessary to eventually reach an expert or business decision to resolve the issue but conceded they varied in their reflection of reality. The validity of those assumptions is discussed later in the report.

In the absence of adequate scientific data on the size or spatial and temporal distribution of the fish populations in the project area, the agencies estimated the average proportion of the fish populations that might have experienced barotrauma while passing the bridges. In essence, this consisted of calculating the proportion of the juvenile population that would pass the bridge in a month (from the proportion of the population caught in the Chipps Island trawl each month), multiplied by the proportion of that month in which the driving of each pile occurred (from the pile driving logs), then multiplied again by the proportion of the cross section of the channel in which the sound intensity for that pile was above the peak sound pressure level (the diameter of the sound threshold for barotrauma divided by the width of the channel). Adjustments were made for extended pauses in driving during which fish might pass the bridge unharmed, and for an assumed higher density of fish in the main channel than in the shallows.

The result is a simple deterministic model in which the number of fish exposed is approximated by assuming that fish move downstream past the bridge at a constant rate and are evenly dispersed in the water column and across the channel. This kind of model does not quantify uncertainty or assess which assumptions and data deficiencies contribute most to the uncertainty.

Apart from the method of analysis, there were some disputes among the agencies on the interpretation of parameters used in the analysis, in particular, the assumed speed at which fish move downstream past the bridges and the treatment of pauses in pile driving. Caltrans believes that fish pass the bridges considerably faster than the rates used by DFG.

Discussion

The involved agencies agree that there were flaws in the assessment and prevention of barotrauma during the RSRB-SRP that should be addressed in future projects. Some of the flaws undoubtedly resulted from the emergency nature of the retrofit and the resultant waiver of normal planning processes, but some point out a more systematic lack of effective cooperative planning, data collection and performance standards. Some recommendations for future practices are given later in this document.

At this point, the Panel believes that a more exhaustive scientific analysis of fish mortality caused by pile driving at the RSRB can be informative as a case study for improving the process, but is unlikely to yield a sufficiently precise estimate of fish mortality to determine a "best available scientific evidence" estimate to guide a monetary settlement for compensatory mitigation. Shortcomings in the available information, discussed later in the document, include grossly inadequate estimates of the numbers and locations of juvenile salmon within the Bay, and a limited understanding of salmon behavior around the bridges, including depth distribution, patterns of movement relative to tidal currents, possible use of eddies caused by bridge structures, use of the main channel vs. shallows, etc. In addition, there is considerable uncertainty regarding the number of salmon entering the Bay and the proportion of those that belong to listed versus unlisted runs. Without these data precise measurements of mortality are infeasible, though improved modeling could produce more informative assessments. (See *Estimating Fish Exposure* below). While there is also uncertainty surrounding actual species-specific effects of acoustic impacts, in the case at hand, the Panel narrowed their review to barotrauma causing injury leading to mortality in juvenile salmon. The data uncertainties alone preclude a precise scientific determination of the take from the RSRB-SRP.

Similarly, the exposure model (assuming that all fish exposed to energies over a very low threshold ultimately die) is oversimplified, and neither reflects the best evidence available at the time nor addresses the considerable additional uncertainties of highly variable strike energies (monitored on only a subset of piles), different effects at different depths, possible behavioral or sublethal impacts, and possibly quite different responses to the different sound frequencies produced by different sized piles. The section below, *Estimating Fish Exposure to Traumatic Noise from Pile Driving*, describes the uncertainties in more detail and recommends improved procedures for future projects. However, these uncertainties also preclude a scientifically precise determination of take.

Ultimately, the agencies agree that the settlement regarding the RSRB-SRP will necessarily be a business decision, with the confidence that none of the choices within the range of values already under negotiation (e.g., that a proportion between 0.010 and 0.037 of the juvenile fish in the protected runs could have been lost in that year because of bridge construction) appear inconsistent with the limited scientific evidence available. In addition, the original sound exposure threshold of 190 dB re 1 μ Pa (peak) used to estimate the radius of impact around the piles is extremely conservative based on the data available in the scientific literature in 2003. It is also precautionary because the radius is estimated based on the occurrence of the highest peak sound pressure level, which may happen only once during a pile driving operation. In reality, the peak sound pressure level can vary significantly from one strike to the next as it depends on many factors, including but not limited to the layered structure of the bottom sediment, the depth of the water, the geometry and material structure of the pile, and the type of hammer and pile cap. However, for the estimate of the number of fish subjected to barotrauma, the assumption is made that the highest peak sound pressure level ever measured at a given radius occurs every single time a pile is struck.

The recommended increase in the exposure threshold as detailed in *Recommendation for Pile Driving Noise Exposure Criteria* below continues to support a precautionary approach, as the

Panel believes it is a risk-free threshold for barotrauma resulting in immediate or delayed mortality of juvenile salmon. However, the Panel cautions that this should not be considered a precedent, or that future mitigation calculations based on the same procedures are scientifically justified.

Recognizing the time constraints on further analysis and the lack of adequate data, the Panel addressed two main scientific issues to inform the agencies' negotiations and also aid in more accurate analysis in the future. Key determinants toward a better scientific estimate of juvenile salmon mortality are the model for the number of fish exposed (exposure model), and the model for the acoustic energy threshold for harm to the fish (effects threshold). The Panel concluded that more rigorous approaches to both are possible, and outlined these approaches in the next two sections. As there were no economists on the Panel, the Panel did not make recommendations regarding valuation methods for reaching specific dollar amounts utilizing their recommendations. The Panel notes that with the limited data available and the difficulty of obtaining accurate information on small fish over such large areas and time spans, any resulting estimates are still associated with considerable uncertainty.

Recommendation for Pile Driving Noise Exposure Criteria

The noise exposure criteria originally applied to the RSRB-SRP were re-examined based on data reported by Hastings (1990; 1995) for no apparent injury in oscar (*Astronotus ocellatus*) and new data published in 2003 (Govoni et al. 2003 and Vagle 2003), which have been reaffirmed by a more recent study (Abbot et al. 2005). The magnitude of the swim bladder oscillation heavily depends on both the frequency and sound pressure level of the impinging sound. The original criteria of 190 dB peak re 1 μ Pa for no injury, recommended in a white paper by Hastings (2002), was not based on measured data, but on a theoretical analysis by Crum and Mao (1996) that was corroborated with data reported by Hastings (1995) on mortality of gouramis (*Trichogaster sp.*).

Yan, Y. H. (1998) noted that gouramis are particularly sensitive to sound because they have a gas bubble in close proximity to their inner ear. Hastings (1995) and Hastings (1990) reported 50-56% mortality in gouramis exposed to continuous tonal sounds of 192 dB peak at 400 Hz and 198 dB peak at 150 Hz for periods of 0.5 to 2 hours. A 0.5-hour exposure is equivalent to 720,000 cycles at 400 Hz and 270,000 cycles at 150 Hz. Because a cycle consists of a positive-peak-to-negative-peak and back-to-positive-peak pressure excursion, the number of peak pressure excursions occurring in a 0.5- to 2-hour time period at either of these frequencies is at least two orders of magnitude higher than the number of peak pressure excursions emitted during a day of pile driving. Hastings (1995) reported that 4 out of 17 gouramis were "stunned" (i.e., became unconscious) within 8-30 minutes. This was most likely due to barotrauma in the brain caused by motion of the gas bubble near the inner ear in response to the impinging sound.

Two new studies particularly relevant to the RSRB-SRP project were reported in the year following Hastings' 2002 recommendations. First Govoni et al. (2003) reported no injury to juvenile pinfish (*Lagodon rhomboides*) and spot (*Leiostomus xanthurus*) exposed to underwater blast waves having a peak positive pressure of 221 dB and a peak negative pressure of 216 dB. Their study included control groups and histopathology examinations to ensure that no injuries

due to sound exposure had occurred. Second, Vagle (2003) examined the effect of pile driving on wild juvenile salmon either in open water or cages at fixed locations in British Columbia. He made extensive sound pressure measurements during pile driving operations at Sicamous Narrows and the Campbell River in Elk Falls. Vagle (2003) reported no effect on wild juvenile salmon exposed to repeated pile strikes at Sicamous Narrows where peak sound pressure levels were about 206 dB. He also found no mortality or apparent injury in caged juvenile Chinook salmon exposed to about 213 dB peak positive pressure and 210 dB peak negative pressure during each of 271 repeated pile strikes at Campbell River. Although this study did not include histopathology examinations or controls, there were no mortalities and no apparent injuries after cumulative pile strikes that produced positive and negative peak pressures with amplitudes 16 to 23 dB higher than 190 dB peak. A difference of 16-23 dB is equivalent to an increase in peak pressure by a factor of 6-14 – about an order of magnitude.

The results of Govoni et al. (2003) and Vagle (2003) are particularly important because barotrauma does not exist if there is no tissue damage (or trauma), and if there is no damage that requires a recovery period to mediate, then there is no effect with cumulative exposures (i.e. repeated pile strikes). In addition the juveniles tested by Govoni et al. were smaller than typical juvenile salmon. The pinfish were only 13.8 – 21.3 mm long and the spot only 15.1 – 25.3 mm long, and their mass was estimated to be less than 0.02 grams each, making them much more vulnerable to barotrauma (Yelverton et al. 1975) than juvenile salmon that are typically about 50-125 mm long and weigh about 5-50 grams. (Juvenile fall Chinook captured by MacFarlane and Norton (2001) along the migration route from Chipps Island to Golden Gate ranged from 68 to 113 mm fork length and from 3.6 to 14.6 g in weight.).

The oscillatory motion of the swim bladder in response to exposure to a large positive or negative pressure spike plays a major role in damaging the surrounding tissues (Wiley et al. 1981). Based on the estimated swim bladder volume for juvenile spot provided by Govoni et al. (2003), the resonant frequency of their swim bladders is about 5400 Hz. Thus the swim bladder would have been significantly excited at its resonant frequency when exposed to a blast wave with pressure rise and fall times on the order of a few microseconds. The oscillatory motion of the swim bladder wall is the greatest at the resonance frequency, so it poses a worst case for potential barotrauma injury.

Yelverton et al. (1975) reported that juvenile salmon, having additional mass, are more resistant to barotrauma than the juvenile pinfish and spot tested by Govoni et al. (2003). Relative motion between the swim bladder and surrounding tissue is reduced as the mass of the fish increases because more mass results in higher inertia, which will resist movement. The swim bladder resonance frequency for juvenile salmon can be estimated from measurements of swim bladder resonance in oscars (Zhou 1992) of about the same size. Oscars are anatomically similar to salmon in that they have no special connection between the swim bladder and inner ear, and no gas bubbles near their brain. Figure 1 shows the results of Zhou's measurements, which indicate a swim bladder resonance frequency between about 400 and 900 Hz for oscars with masses between 10 and 50 grams. It is important to note that the oscars tested by Hastings (1990; 1995) that had no injury for long continuous exposures to sound pressure levels of 192 dB and 198 dB peak, were 75-80 mm long with masses between 10 and 50 grams.

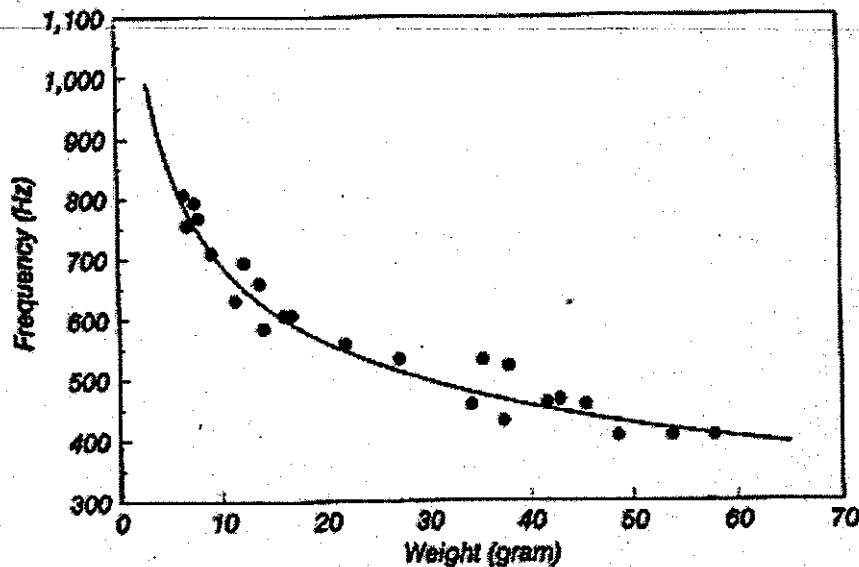


Figure 1. Measured swim bladder resonance frequencies for oscars (*Astronotus ocellatus*) as a function of mass (from Zhou 1992).

Recommended exposure criteria for the RSRB-SRP

Even though Govoni et al. (2003) found no injury in juvenile spot and pinfish when exposed to 221 dB peak SPL, and these fishes are believed to be more vulnerable to barotrauma than larger juvenile salmon, to err on the side of caution and account for biological variation, especially in the absence of additional data sets, reducing the peak sound pressure level so that only a fraction of the acoustic energy at which Govoni et al. found no barotrauma at the cellular level in histopathology examinations is reasonable. On a pressure scale, 201 dB peak is a reduction by a factor of 10 in acoustic pressure and a reduction by a factor of about 100 in acoustic energy, so it is reasonable to assume that juvenile salmon would not be injured with repeated exposure to pile driving signals having a peak positive and /or negative pressure of 201 dB.

A level of 201 dB peak pressure as a no-injury noise exposure criteria for juvenile salmon is supported by apparent no-injury data from Hastings (1990; 1995) for oscars and from Vagle (2003) for juvenile salmon, and most recently no-injury data from Abbott et al. (2005). Abbott et al. (2005) exposed caged juvenile fall-run Chinook salmon, shiner perch and anchovy to pile driving with peak sound pressure levels exceeding 190 dB and used histopathology examinations to conclude that none of the fish were injured. It is very important that effects data used to estimate sound exposures thresholds include appropriate controls and proper handling of test specimens as part of the experiment, and be based on histopathology examinations to determine if injury occurred.

All sizes of piles at RSRB produced noise with significant spectral energy density in the 400 to 900 Hz frequency range, the estimated range of swim bladder resonance in juvenile salmon. So emissions from all sizes of piles with peak positive or negative pressure amplitudes of 201 dB or greater should be considered potentially harmful to juvenile salmon in this case.

According to the peak sound pressure levels measured as a function of distance from each of the piles at RSRB (Reyff 2003), the diameters of impact corresponding to the recommended 201 dB peak noise exposure criteria are summarized in Table 1. This revised estimate, exclusively for the purposes of this report and not intended for other use, reduces the diameter of impact from 460 m to 160 m for the largest diameter piles.

Table 1. Diameters of Impact for the Recommended Noise Exposure Criteria of 201 dB Peak for No Injury to Juvenile salmon

Pile Size	Radius or range of impact (m)	Diameter of impact (m)
12"/14"/24"	15	30
30"/66"	40	80
126"/150"/162"	80	160

Applying these diameters of impact to the DFG Exposure Model results in reductions of take from 0.1163% to 0.0413% of juvenile winter run Chinook salmon, and from 0.2156% to 0.0681% of juvenile spring run Chinook salmon. Because frequency content and temporal waveforms of sound emitted by pile driving depends on many factors (e.g., size and shape of piles, pile material, type of hammer, sediment structure, etc.), this recommendation is applicable only to estimate immediate and delayed mortality of juvenile salmon for the RSRB-SRP.

References Cited

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Estimating Fish Exposure to Traumatic Noise from Pile Driving

Determining the impact of pile driving on fish involves two fundamental estimation problems. One is to estimate the intensity and frequency of sound that will cause trauma in fish, discussed in the previous section. Another is to estimate the number or proportion of fish exposed to dangerous levels of sound. Here we provide a brief analysis of the problem of estimating exposure and recommend the most robust approach to determining probable levels of exposure under field conditions.

Both DFG and Caltrans used a simple deterministic model to assess exposure to dangerous sound levels (based on a critical sound level of 190 dB) and came to rather different conclusions concerning proportion of salmonid population that was exposed (0.037 vs 0.010 as reported to the Panel by DFG and Caltrans). The difference in estimated exposure was due to different assumptions about such variables as pile drive time and transit speeds of salmon through the project area. On its surface, the impasse between the agencies over mitigation for take at the RSRB-SRP appears to be over the appropriate choice of parameter values in these models. However, the Panel believes that the actual modeling approach is inappropriate for the problem of estimating exposure and for the most meaningful use of science to inform management decisions regarding pile driving impact.

The basic structure of the model used by DFG and Caltrans is inappropriate because it is deterministic and has a rather inflexible architecture. Although sensitivity analysis can be used to explore how variation in input parameters influences estimated exposure (Caltrans did some of this kind of sensitivity analysis), it is virtually impossible to use this kind of model structure to explore the range of uncertainty inherent in the data and in our conceptual models of fish movement past the project. The use of a simple deterministic model made sense when agencies had to make a quick determination of impact while the project was underway. However, once the dispute arose over degree of impact, a more robust modeling procedure should have been implemented.

If the system to be modeled was well understood and consistent in its behavior, the kind of model used by DFG and Caltrans would be reasonable. However, biological systems are typically poorly understood and display inconsistent behavior. In this instance, as well, there are serious gaps in data and observation that further complicate the analysis. Uncertainty is a predominant feature of the data and of the system to be modeled. Given the degree of uncertainty, what is needed is a flexible model that allows a wide-ranging exploration of the

implications of the many sources of uncertainty and their consequences for exposure.

To illustrate the many ways in which uncertainty and lack of observations come into play in assessing exposure in the RSRB project consider the following:

1. The only consistent data concerning timing and abundance of juvenile salmon entering San Francisco Bay is from the monthly trawling conducted by the U.S. Fish and Wildlife Service at Chipps Island (Brandes and McLain, 2001; Low, 2005). Chinook salmon in the Sacramento/San Joaquin system occur in 4 races but only two are listed under the CESA (winter and spring run races). Races can be distinguished to some extent by their size and time at which they pass Chipps Island, although still with considerable uncertainty.

The two listed races are, given their diminished abundance, relatively rare in the trawl samples from Chipps Island. The estimates of abundance for these races derived from expanding the catch data from Chipps Island have, therefore, high uncertainty. Similar uncertainty exists even if one uses only the catch data to estimate percentage composition of the run of fish passing Chipps Island. Furthermore, the timing and abundance of the four races varies from year to year. The timing and relative abundance of the two listed races when they pass Chipps Island is, therefore, very uncertain.

2. Once leaving Chipps Island, the small fish still have about 30 km to travel before entering the project area. The timing of arrival near RSRB and the length of time young Chinook spend in the project area are unknown. Based on the analysis of daily growth rings on otoliths of Chinook captured as they passed Chipps Island and again as they approached Golden Gate, McFarlane and Norton (2002) suggest that it took young fish about 40 days to traverse the estuary. These results suggest an average daily rate of travel of 1.6 km/d. In an email to Patrick Rutten, Bruce McFarlane suggested that Chinook took between 10 and 30 days to transit the 20 km from Benecia to Pt. Pinole, a rate of travel between 0.7 and 2 km/d. A small number of tagged fish captured in the estuary suggested a more rapid rate of travel of 4.0 km/d but with considerable variability. These rates of travel are slower than rates of migration of juvenile sockeye salmon through the Strait of Georgia, British Columbia (6-7 km/d, Groot and Cooke 1987). Peterman et al. (1994) modeled the migration of juvenile sockeye through the Strait of Georgia and found that weak directed migration of about 4 cm/s (3.5 km/d) coupled with net surface water movement was sufficient to explain the seasonal pattern of movement of young sockeye through the strait and that the migration route was primarily dictated by current speed and direction rather than directional swimming. These rates of travel are much less than the 0.5 to 1 knot (22.2-44.4 km/d) speeds used by DFG and Caltrans in their model. Average rates of travel, however, do not adequately represent the movement of migrating young salmon, which typically move in jumps, feeding and resting between jumps (Healey 2002). When actively migrating from one resting site to the next, young fish may make use of selective tidal transport, so that their actual rate of travel is not closely related to swimming speed (Levy and Cadenhead 1994). Furthermore, all the data available for juvenile salmon movements through San Francisco Bay relate to the fall run race. Winter and spring run may well behave differently. Healey (1991) found that juvenile spring run (stream type) Chinook appeared to migrate quickly away from near shore nursery areas whereas juvenile fall run (ocean type) Chinook remained in near shore nurseries for

weeks. Key variables related to estimating exposure (when do young salmon that pass Chipps Island arrive at the project site and how do they move through the site), therefore, remain unknown. Both Caltrans and DFG were forced to make assumptions about fish relative abundance and movement behavior to assess impact using their model. Unfortunately, their model structure did not allow easy assessment of how robust conclusions were with regard to these unknowns.

3. A third area of high uncertainty is the distribution of young salmon across the channel. There are few data to support any particular distribution. Analysis of trawl and beach seine samples taken over 23 years (7 years for beach seines) throughout San Francisco Bay indicates that juvenile Chinook are concentrated along the main channel from the Delta to Golden Gate (Jahn, 2004). Juveniles were captured in both trawl and beach seine hauls taken in the vicinity of RSRB, however, indicating that both main channel and near shore habitats were being used. Because of the way the trawls were deployed, the sample results give only a rough qualitative picture of salmon distribution. Shoreline complexity suggests that many tidally induced eddies would exist along both the San Rafael and Richmond shores providing potential holding and feeding areas adjacent to the main channel in the vicinity of the RSRB (Figure 2).

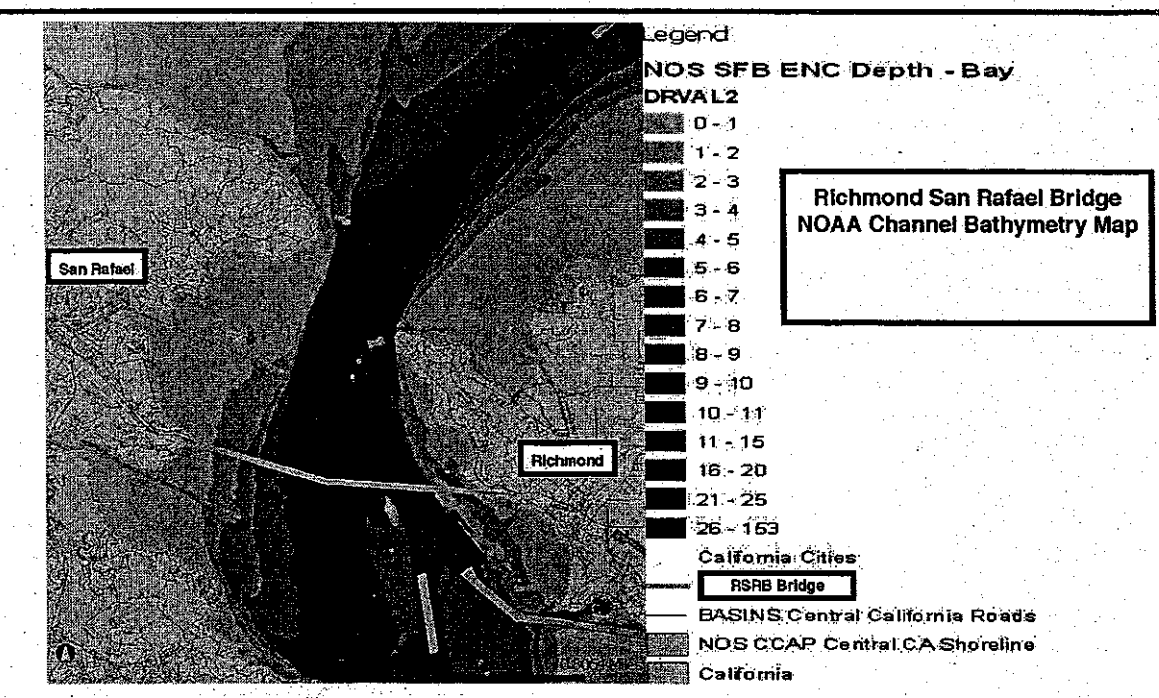


Figure 2. Shoreline and bathymetry in the vicinity of the RSRB.

In the shipping channel of the Columbia River, Carlson et al. (2001) found the highest proportion of juvenile Chinook were along the channel margin with somewhat fewer in the main channel and fewest in the shallow near shore waters. The distribution varied somewhat with season location and time of day and substantial numbers were found in the channel margins and near

shore at all seasons and times of day (Table 2).

Table 2. Percent of fish detected during three study periods in the Near Shore, Channel Margin, and Channel habitats of the Columbia River shipping channel.

Season, Time, Location	Near Shore	Channel Margin	Channel
Spring, 1997	15.3	55.5	29.2
Summer 1997 downstream site	26.2	42.1	31.7
Summer 1997 upstream site	15.0	63.3	21.7
Summer 1998	17.4	40.4	42.2

Although it seems likely that most juvenile salmon will be in the channel or along the channel margin, at times many may be holding and feeding near shore. It is also conceivable that, if young salmon are holding in the vicinity of RSRB that they will move back and forth through the project area to occupy changing near shore eddies on each tidal cycle.

A more flexible modeling approach that would allow detailed exploration of the implications of uncertainty for exposure and impact is individual-based modeling (DeAngelis and Yeh, 1994, Murdoch et al. 1992). An individual-based model has many advantages that are important to analysis of the exposure problem, including:

1. Explicit assessment of the importance of the many uncertainties in the data and understanding of fish abundance, movement, and impact (seasonal timing, cross channel and vertical distribution, movement behavior, trauma thresholds, sublethal effects, behavior responses to noise below trauma levels, variable sound frequency, etc.);
2. Straightforward exploration of how robust exposure and impact results are to uncertainties in data and understanding of fish movement and response to sound;
3. Great heuristic value in helping to define critical experiments; and
4. The model framework is easily adapted to future projects.

Individual-based simulation models are not difficult to construct and implement. Numerous examples already exist in the literature on salmon migration (e.g., Peterman et al., 1994; Walter et al., 1997). In designing and implementing an individual-based model for the RSRB, estimated numbers of the listed races of Chinook passing Chipps Island could be treated as a pool of migrants from which numbers could be drawn to enter the project area according to whatever time schedules were considered worth examining. Their initial cross-channel distribution could be specified as well as behavior of individual modeled fish in relation to tidal cycle, flow velocities, or pile driving noise. For modeling fish movements it would be useful to have a 2 dimensional, tidally varying, flow field model for the project area. Locations and time course of pile driving can be introduced to the realistic geometry of the project area. Since the location of all modeled fish would be known for each time step of the model, both individual and multiple pile drive strikes could be modeled and a history of exposure developed for each modeled fish.

Outputs from the model could include (for a given set of assumed fish behaviors, pile drive schedules, sound levels, trauma thresholds and their associated variances) schedules of exposure to one, two, three or more sound pulses above the specified trauma thresholds. By numerically

integrating across plausible behavior sets (probably the most uncertain aspect of the current exposure problem), probability distributions of traumatic exposure could be produced to assist with impact decision-making. Comparison of exposure predicted by different behavior assumptions would help pin point the unknowns that have the greatest influence on exposure for further investigation.

It is important to recognize that, in situations characterized by great scientific uncertainty, there is no single "best" estimate of impact. The probability distribution of exposure and impact is likely to be quite broad. At meetings of the Panel it was suggested that the proportions of the populations impacted that were estimated by DFG (0.037) and Caltrans (0.010) were likely to represent extremes. Unfortunately, given the nature of the uncertainties, it is not possible at this stage of analysis to say that these two estimates do represent extremes, although given the size and geometry of the project area it is unlikely that the proportion of the populations impacted is very large. As demonstrated in the section on barotrauma above, uncertainty in the best sound threshold for barotrauma also has great effect on the exposure and impact.

An important consideration in assessing impacts in situations of high uncertainty is the degree of precaution that should guide the final decision. Although the panel was told that the modeling done by both Caltrans and DFG was fundamentally conservative (erring on the side of high impact), it was not clear exactly how the estimates were conservative. In the objective application of precaution it is important to be clear about how precaution is incorporated into any final quantitative estimates.

For future projects, given the uncertainty of exposure and the many gaps in data and understanding, pre-project assessments should be designed to address critical data gaps. During pile driving, consideration should be given to monitoring fish abundance in the vicinity of pile driving with a view to ceasing pile driving if high abundance of fish enters the danger zone. Modern acoustic systems provide a reliable way of monitoring fish activity near pile driving operations. Acoustic target identification is still problematic but it seems inappropriate to subject large numbers of fish to potentially lethal sound levels regardless of species. An individual-based model would allow easy exploration of how a precautionary choice of parameters would influence exposure.

Unfortunately, scientific uncertainty precludes a precise determination of pile driving impact in the RSRB-SRP. Although a business decision must still be made in assessing impact, this should probably be a settlement negotiated between the agencies. It is not, at this stage, a scientific decision.

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Conclusions

In the midst of emergency seismic retrofits to Bay Area bridges, Caltrans and regulatory agencies realized acoustic impacts from pile driving were causing fish mortality. Under intense political and time pressures, Caltrans and DFG began negotiating settlements regarding the take of juvenile winter run and spring run Chinook salmon. While they came to an agreement for the BMB-RSP impacts, they were at an impasse regarding a settlement for the RSRB-RSP impacts. They elevated the discussion until agency secretaries asked to convene a blue ribbon panel of experts to resolve the dispute.

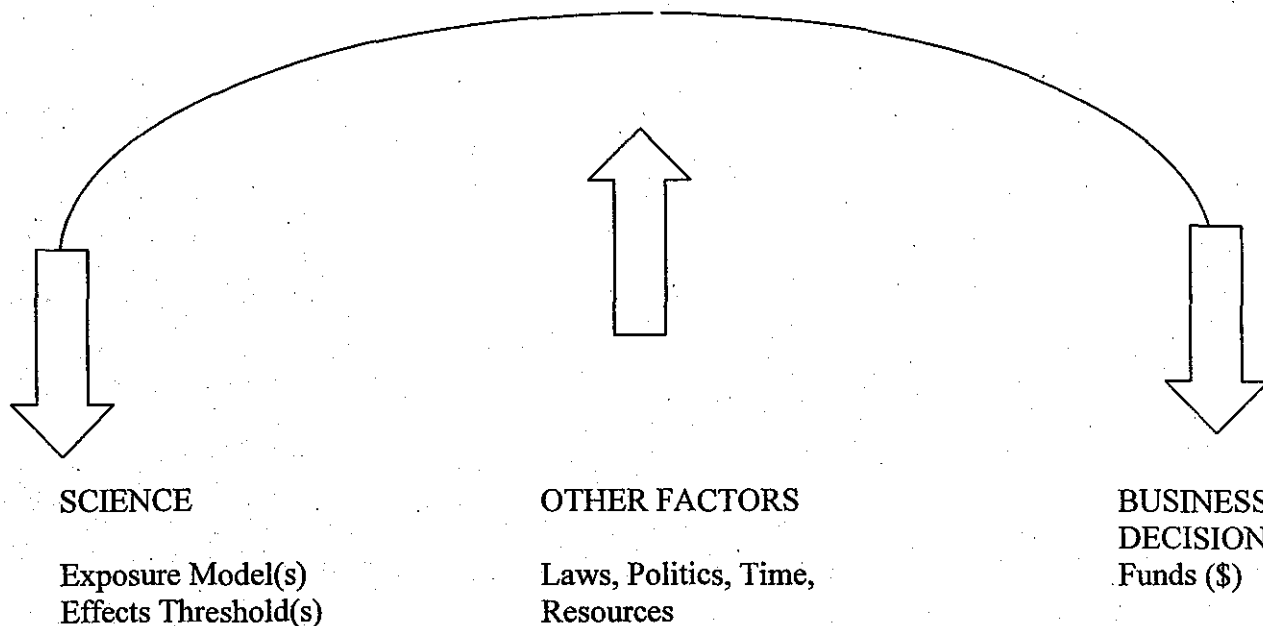
With only three meetings and a total of six weeks to analyze and deliberate, the four-person Panel, with the support of agency staff and consultants, reviewed the existing data from the project and found that overall, they did not have sufficient information to render a scientifically valid estimate of fish mortality due to barotrauma. They also concluded that the existing DFG deterministic model was insufficient to calculate impacts and closely examined the inherent challenges regarding the data underlying assumptions such as swim speed and fish distribution.

Given these handicaps, the Panel concluded it could review current literature and findings to recommend a revised estimate of 201 dB peak as a sound pressure level (SPL) threshold which could be utilized by the agencies to determine the proportion of the fish population impacted for the RSRB-SRP only. If the 201dB threshold is applied in the DFG Exposure Model, 0.0413% of juvenile winter run Chinook Salmon were exposed to peak SPLs > 201 dB, and 0.0681% of juvenile spring run Chinook salmon were exposed to peak SPLs > 201 dB.

The Panel emphasizes that this recommendation is to be used for this assessment only, without assumption of precedence for other use past or future. Application of this threshold resulted in estimates of impact radii that can be used by Caltrans and DFG to reach a business decision for an overall estimation of impact. While the Panel did not have the time or expertise to develop a separate model as part of this report, the Panel included recommendations toward creating an individual-based model that would better quantify the level of uncertainty involved. This type of model would also assess which assumptions and data deficiencies contribute most to this uncertainty.

Because of the lack of data and model structure on which to base a stochastic model of fish exposure to impulsive sound, the Panel finds that additional deterministic modeling of ever increasing complexity will not address core problems of fish exposure to impulsive sound on which to base a business decision for impact mitigation. The fish exposure component of a business decision for this dispute alone, following the guidance for use of the sound exposure threshold derived by the Panel, needs to reflect the available data without extrapolation and with the fewest possible assumptions. Therefore, to provide assistance with finding a business solution to this issue, and recognizing all of the very serious problems with available data and the very limited information about the migratory behavior of listed juvenile salmonids, the Panel suggests that the Chipps Island trawl data be used to apportion the juveniles in time during the project work period without extrapolation or modifying assumptions about fish migratory behavior. Temporal distribution at Chipps Island could be delayed about 2 weeks to account for time required for juvenile salmon to migrate to the project site. Distribution of juvenile fish in space across the channel may follow negotiated agreements between the state agencies.

As one Panel member depicted (below) there are a number of influences affecting this process, and Panel members are most comfortable limiting themselves to addressing the current science as well as future approaches. It will be up the agencies involved to utilize this information to come to an informed agreement.



Additional Recommendations

While the Panel discussed (and continues to discuss) various policy recommendations, further development of these recommendations would require additional time past the current deadline of February 26th. If agency representatives want more information regarding these various recommendations, they would need to contact the Panel about an extended timeline and the feasibility of continuing the current dialog. The Panel notes that there is continuing research in pile driving and seismic acoustic impacts and in the next few years, or even months, additional data will be available to help address some of the concerns posed in the RSRB analysis.

Memorandum

TO: Toll Bridge Program Oversight Committee (TBPOC) **DATE:** April 25, 2007

FR: Tony Anziano, Toll Bridge Program Manager, Caltrans

RE: Agenda No. - 4b
Item- Program Issues
FY 2007-08 Capital Outlay Support Allocation Request

Cost:

For FY 2007-08, the Department and BATA has respectively requested allocations of \$127.4 million and \$6.7 million for capital outlay support (COS) for the Seismic Retrofit Program and the New Benicia-Martinez Bridge Project. Overall, there is no impact to overall program and project budgets, though contract level budget changes will be necessary in the future.

Schedule Impacts:

None

Recommendation:

Information Only

Discussion:

BATA allocates COS funds to the Department for the toll bridge projects on a fiscal year-to-fiscal year basis. For the Regional Measure 1 Program, BATA and the Department follows this typical schedule:

First Week of April - The Department presents a draft COS allocation request, based on the Governor's budget and current projections, to BATA for review.

Second Week of May - Following any further clarifications and revisions, the draft allocation request is presented to the BATA Oversight Committee for information and comment.

Second Week of June - The final allocation request is presented to the BATA Oversight Committee for referral to the full Authority for final approval on the fourth week of June.

Prior to presenting this year's allocation request to the BATA Oversight Committee, staff is presenting the draft COS request as an informational item to the TBPOC. The draft request is summarized as follows:

Seismic Retrofit Program

For FY 2007-08, the Department has requested allocations totaling \$127.4 million for the seismic retrofit program. Due to actual expenditures for the current fiscal year are coming in less than planned and BATA's practice to roll over excess allocation from the current fiscal year to the next, the net allocation to the program will be \$94.2 million, or \$29.2 million less than requested for the upcoming fiscal year.

BATA has also requested a direct allocation of \$4.0 million from the East Span Project to cover direct project related costs that can be better charged directly to BATA versus being reimburse through the Department. These costs include airfare for State staff (\$250K), public outreach and media buys for Labor Day closure (\$750K), transit support for the Labor Day TMP (\$500K), historic video documentation of the project (\$1M), computer modeling of project (\$250K), and a contingency (\$1.25M).

A number of contracts, including the South/South Detour, the Stormwater Treatment Measures and Oakland Touchdown (OTD) contracts, will require future COS budget changes to address FY 2007-08 allocations that will exceed their current contract budgets. Budget changes will be necessary to address the revised duration of the detour contract, slightly higher burn rate of the stormwater contract, and the OTD contracts splits. These changes can be addressed in June along with the allocation of SRP funds for the Oakland Touchdown #1 contract after bids are opened.

New Benicia-Martinez Bridge Project

For FY 2007-08, the Department has requested allocations totaling \$6.7 million for the New Benicia-Martinez Bridge Project. Expenditures for the current fiscal year are projected to overrun the annual allocation by approximately \$4.2 million due to:

- a. Acceleration of the PS&E package for existing bridge modification contract to meet the revised completion date of the new bridge.
- b. Addition of deck rehabilitation scope to the modification contract.
- c. Extended contract close-out costs.

The additional expenses do not represent an overall cost increase to the project, as these additional costs are budgeted within the project's contingency and risk management. To cover the additional expenditures, BATA will be request COS budget changes to the mitigation contract and allocating an additional \$4.2 million to the project along with the FY 2007/08 COS allocation request for a total of \$10.9 million.

A breakdown of COS allocations and expenditures by project is attached. The information provided in the table is tentative and may change as additional information is obtained.

Attachments:

- 1) Attachment A - FY 2007/08 Seismic Retrofit Program Capital Outlay Support Allocation Request
- 2) Attachment B - FY 2007/08 New Benicia-Martinez Bridge Project Capital Outlay Support Allocation Request

Attachment A

FY 2007-08 Seismic Retrofit Program Capital Outlay Support Allocation Request

Capital Outlay Support (Phases K,0,1,2,3)

EA	Description	Projected COS Expenditures Through FY 2006-07	Allocated COS Through FY 2006-07	Over/(Under) Run of COS Through FY 2006-07	Requested COS For FY 2007-08	Total COS Requested Through FY 2007-08	Current Contract COS Budget	Remaining Unallocated Contract COS Budget
		A	B	C=A-B	D	E=B+C+D	F	G=F-E
San Francisco-Oakland Bay Bridge East Span Replacement								
01030	YBI R/W Support Work for Land Transfer	36,000	36,000	-		36,000	36,000	-
01200	New East Bay Spans-Pre-split	97,741,000	97,741,000	-		97,741,000	97,741,000	-
01201	Split EA's - YBI & SAS	21,529,000	21,529,000	-		21,529,000	21,529,000	-
01202	Skyway	166,500,000	173,650,000	(7,150,000)	13,800,000	180,300,000	197,000,000	16,700,000
01203	Oakland Touchdown - Pre-split	3,801,000	3,801,000	-		3,801,000	3,801,000	-
01204	Oakland Touchdown -Pre-split	17,526,000	17,526,000	-		17,526,000	74,400,000	56,874,000
01205	Oakland Touchdown Geofill	2,471,000	2,471,000	-		2,471,000	2,500,000	29,000
01206	YBI Transition and SAS - Pre-split	23,352,000	23,352,000	-		23,352,000	23,352,000	-
01207	YBI Archaeology - Midden I	1,075,000	1,075,000	-		1,075,000	1,100,000	25,000
01208	Pile Installation Demonstration Project	1,792,000	1,792,000	-		1,792,000	1,800,000	8,000
01209	Demolition of the Existing Bridge	280,000	590,000	(310,000)	1,550,000	1,830,000	79,700,000	77,870,000
0120A	West Spans 30% Design Bike Lane Feasibility Study	3,194,000	3,194,000	-		3,194,000	3,194,000	-
0120C	SAS Land Foundation (W2)	9,201,000	9,201,000	-		9,201,000	10,000,000	799,000
0120E	SAS Marine Foundation (E2/T1)	23,000,000	25,420,000	(2,420,000)	7,300,000	30,300,000	52,500,000	22,200,000
0120F	SAS Main Span	40,000,000	64,180,000	(24,180,000)	47,700,000	87,700,000	214,600,000	126,900,000
0120G	YBI Electrical Substation	6,380,000	6,380,000	-		6,380,000	6,500,000	120,000
0120H	SAS - YBI Transition Structure	770,000	770,000	-		770,000	770,000	-
0120J	Stormwater Treatment Measures	6,900,000	5,970,000	930,000	860,000	7,760,000	6,000,000	(1,760,000)
0120P	YBI Transition Structure	14,000,000	16,460,000	(2,460,000)	9,800,000	23,800,000	78,700,000	54,900,000
0120Q	YBI - USCG Road Relocation	2,669,000	2,669,000	-		2,669,000	3,000,000	331,000
0120R	South/South Detour	24,900,000	25,110,000	(210,000)	13,200,000	38,100,000	29,500,000	(8,600,000)
2A510	Skyway Extension	94,000	94,000	-		94,000	94,000	-
0120K/01351	Replace Navy Submarine Electrical Cable	600,000	1,800,000	(1,200,000)	1,060,000	1,660,000	-	(1,660,000)
0120L	Oakland Touchdown - Marine Foundation and Westbound	4,200,000	5,300,000	(1,100,000)	9,050,000	13,250,000	-	(13,250,000)
0120M	Oakland Touchdown - Complete Eastbound Structure	300,000	140,000	160,000	2,200,000	2,500,000	-	(2,500,000)
0120N	Electrical Connections	70,000	10,000	60,000	-	70,000	1,400,000	1,330,000
0120x9	Right-of-Way and Environmental Mitigation	-	-	-		-	-	-
BATA	BATA Direct Project Costs			-	4,000,000	4,000,000	-	(4,000,000)
01309	Experimental Seismic Joint Testing	-	-	-		-	-	-
Project Totals		472,381,000	510,261,000	(37,880,000)	110,520,000	582,901,000	909,217,000	326,316,000

** Information provided in table may change as additional data is obtained.

Attachment A

FY 2007-08 Seismic Retrofit Program Capital Outlay Support Allocation Request

Capital Outlay Support (Phases K,0,1,2,3)								
EA	Description	Projected COS Expenditures Through FY 2006-07	Allocated COS Through FY 2006-07	Over/(Under) Run of COS Through FY 2006-07	Requested COS For FY 2007-08	Total COS Requested Through FY 2007-08	Current Contract COS Budget	Remaining Unallocated Contract COS Budget
		A	B	C=A-B	D	E=B+C+D	F	G=F-E
San Francisco-Oakland Bay Bridge East Span Interim Retrofit								
04300	Interim East Bay Retrofit	6,569,000	6,569,000	-	-	6,569,000	6,569,000	-
04340	East Bay Retrofit Design to P&Q	1,507,000	1,507,000	-	-	1,507,000	1,507,000	-
04341	Seismic Retrofit	2,192,000	2,192,000	-	-	2,192,000	2,192,000	-
04342	Seismic Retrofit	546,000	546,000	-	-	546,000	546,000	-
04343	Seismic Retrofit; Piers E23-E39	4,558,000	4,558,000	-	-	4,558,000	4,558,000	-
04344	Foundation Stability Reinforcement	1,839,000	1,839,000	-	-	1,839,000	1,839,000	-
04345	Seismic Retrofit Steel Towers	1,331,000	1,331,000	-	-	1,331,000	1,331,000	-
04346	Seismic Retrofit Truss Lateral Bracing	136,000	136,000	-	-	136,000	136,000	-
0434A	Seismic Retrofit - Phase 3	1,350,000	1,350,000	-	-	1,350,000	1,350,000	-
0434C	Seismic Retrofit - Phase 3	580,000	580,000	-	-	580,000	580,000	-
0434E	Seismic Retrofit - Phase 3	582,000	582,000	-	-	582,000	582,000	-
0434F	Seismic Retrofit - Phase 3	911,000	911,000	-	-	911,000	911,000	-
0434G	Seismic Retrofit - Phase 3	3,291,000	3,291,000	-	-	3,291,000	3,291,000	-
0434H	Seismic Retrofit - Phase 3	7,179,000	7,179,000	-	-	7,179,000	7,179,000	-
0434J	Seismic Retrofit - Phase 3	6,867,000	6,867,000	-	-	6,867,000	6,867,000	-
0434K	Seismic Retrofit - Caisson E3 Cofferdam	8,000	8,000	-	-	8,000	8,000	-
0434U	Seismic Retrofit - Phase 3	17,000	17,000	-	-	17,000	17,000	-
	Project Totals	39,463,000	39,463,000	-	-	39,463,000	39,463,000	-
San Francisco-Oakland Bay Bridge West Approach Replacement								
0435A	West Approach to SFOBB from 5th St. to Beale St.	884,000	884,000	-	-	884,000	884,000	-
0435C	West Approach to SFOBB on Transbay Transit Terminal	7,440,000	7,440,000	-	-	7,440,000	7,440,000	-
0435F	East Loop of Transbay Transit Terminal	150,000	1,150,000	(1,000,000)	180,000	330,000	330,000	-
0435V	West Approach	70,500,000	69,790,000	710,000	16,600,000	87,100,000	95,811,000	8,711,000
13333	WB Appr. Units 12, 13, and 14	15,535,000	15,535,000	-	-	15,535,000	15,535,000	-
44201	Public Info/Comm. Awareness Prog			-	-	-	-	-
44202	TMP Equipment			-	-	-	-	-
44203	Facilities Improvement			-	-	-	-	-
	Project Totals	94,509,000	94,799,000	(290,000)	16,780,000	111,289,000	120,000,000	8,711,000

** Information provided in table may change as additional data is obtained.

Attachment A

FY 2007-08 Seismic Retrofit Program Capital Outlay Support Allocation Request

Capital Outlay Support (Phases K,0,1,2,3)								
EA	Description	Projected COS Expenditures Through FY 2006-07	Allocated COS Through FY 2006-07	Over/(Under) Run of COS Through FY 2006-07	Requested COS For FY 2007-08	Total COS Requested Through FY 2007-08	Current Contract COS Budget	Remaining Unallocated Contract COS Budget
		A	B	C=A-B	D	E=B+C+D	F	G=F-E
San Francisco-Oakland Bay Bridge West Span Retrofit								
04347	YBI Tunnel Approach, Unit 19	3,432,000	3,432,000	-	-	3,432,000	3,432,000	-
04348	Seismic Retrofit - Modify Expansion Joints	65,000	65,000	-	-	65,000	65,000	-
04349	Pile Driveability and Installation Evaluation	123,000	123,000	-	-	123,000	123,000	-
0434L	YBI Tunnel, Unit 20	2,077,000	2,077,000	-	-	2,077,000	2,077,000	-
04350	Seismic Retrofit	70,000	70,000	-	-	70,000	70,000	-
04351	Seismic Retrofit Suspension Bridge	665,000	665,000	-	-	665,000	665,000	-
04352	Seismic Retrofit	7,000	7,000	-	-	7,000	7,000	-
04353	WB Upper Appr. Bent 54-57, Unit 11	145,000	145,000	-	-	145,000	145,000	-
04354	WB Caissons, Piers W2-W6, Unit 15	7,163,000	7,163,000	-	-	7,163,000	7,163,000	-
04355	WB Susp Anchorages & W1, Unit 16	10,667,000	10,667,000	-	-	10,667,000	10,667,000	-
04356	WB Susp Towers, Unit 17	1,500,000	1,500,000	-	-	1,500,000	1,500,000	-
04357	WB Susp Superstructure, Unit 18	4,691,000	4,691,000	-	-	4,691,000	4,691,000	-
0435U	West Bay Suspension (Bridge 34-3)	42,551,000	42,551,000	-	-	42,551,000	42,551,000	-
0A220	Transbay Terminal Study	550,000	550,000	-	-	550,000	550,000	-
44200	Develop TMP	832,000	832,000	-	-	832,000	832,000	-
44201	Public Info/Comm. Awareness			-	-	-	-	-
44204	Installation of Traffic Surveillance Equipment	269,000	269,000	-	-	269,000	269,000	-
	Project Totals	74,807,000	74,807,000	-	-	74,807,000	74,807,000	-
Richmond-San Rafael Bridge Retrofit								
00449	Seismic Retrofit Investigation	751,000	751,000	-	-	751,000	751,000	-
04380	Seismic Retrofit	51,000	51,000	-	-	51,000	51,000	-
04381	Seismic Retrofit	28,255,000	28,255,000	-	-	28,255,000	28,255,000	-
04382	Main Span Fnds & Tower	1,953,000	1,953,000	-	-	1,953,000	1,953,000	-
04383	Steel Towers (combined w/043821)	50,000	50,000	-	-	50,000	50,000	-
04384	Main Super, Appr. & Trestle	1,062,000	1,062,000	-	-	1,062,000	1,062,000	-
04385	Seismic Retrofit - East and West Approach	137,000	137,000	-	-	137,000	137,000	-
04386	Seismic Retrofit - Concrete Trestle	112,000	112,000	-	-	112,000	112,000	-
0438U	Seismic Retrofit (combine 04-04382* & 04-04384*)	92,811,000	92,811,000	-	-	92,811,000	93,029,000	218,000
13295	Public Access	1,500,000	1,090,000	410,000	100,000	1,600,000	1,600,000	-

** Information provided in table may change as additional data is obtained.

Attachment A

FY 2007-08 Seismic Retrofit Program Capital Outlay Support Allocation Request

Capital Outlay Support (Phases K,0,1,2,3)								
EA	Description	Projected COS Expenditures Through FY 2006- 07	Allocated COS Through FY 2006- 07	Over/(Under) Run of COS Through FY 2006-07	Requested COS For FY 2007-08	Total COS Requested Through FY 2007- 08	Current Contract COS Budget	Remaining Unallocated Contract COS Budget
		A	B	C=A-B	D	E=B+C+D	F	G=F-E
	Project Totals	126,682,000	126,272,000	410,000	100,000	126,782,000	127,000,000	218,000

** Information provided in table may change as additional data is obtained.

Attachment A

FY 2007-08 Seismic Retrofit Program Capital Outlay Support Allocation Request

Capital Outlay Support (Phases K,0,1,2,3)

EA	Description	Projected COS Expenditures Through FY 2006-07	Allocated COS Through FY 2006-07	Over/(Under) Run of COS Through FY 2006-07	Requested COS For FY 2007-08	Total COS Requested Through FY 2007-08	Current Contract COS Budget	Remaining Unallocated Contract COS Budget
		A	B	C=A-B	D	E=B+C+D	F	G=F-E
Benicia-Martinez Bridge Retrofit								
04400	Seismic Retrofit	4,000	4,000	-	-	4,000	4,000	
04401	Parent of 044021, 044031 & 044041	8,931,000	8,931,000	-	-	8,931,000	8,931,000	-
04402	Approaches	4,750,000	4,750,000	-	-	4,750,000	4,750,000	-
04403	Seismic Retrofit - Superstructure	287,000	287,000	-	-	287,000	287,000	-
04404	Seismic Retrofit - Substructure	4,474,000	4,474,000	-	-	4,474,000	4,474,000	-
0440U	Main Span	18,827,000	18,827,000	-	-	18,827,000	18,827,000	-
13341	Seismic Retrofit	557,000	557,000	-	-	557,000	557,000	-
14760	Revegetation (Mitigation)	7,000	7,000	-	-	7,000	7,000	-
1A120	Emergency Windlock Bolt Replacement	261,000	261,000	-	-	261,000	261,000	-
	Project Totals	38,098,000	38,098,000	-	-	38,098,000	38,098,000	-
Carquinez Bridge Retrofit								
04390	Seismic Retrofit	19,000	19,000	-	-	19,000	19,000	
04391	Environmental Document	10,408,000	10,408,000	-	-	10,408,000	10,408,000	
04392	Westbound Facility - Retrofit	68,000	68,000	-	-	68,000	68,000	
04393	Eastbound Facility	18,305,000	18,305,000	-	-	18,305,000	18,305,000	
	Project Totals	28,800,000	28,800,000	-	-	28,800,000	28,800,000	-
San Mateo-Hayward Bridge Retrofit								
04360	Seismic Retrofit	1,000	1,000	-	-	1,000	1,000	
04361	Bridge Rehabilitation SR 616	14,280,000	14,280,000	-	-	14,280,000	14,280,000	
04362	Existing Trestle	2,160,000	2,160,000	-	-	2,160,000	2,160,000	
04363	West Approaches & Pier 1	1,281,000	1,281,000	-	-	1,281,000	1,281,000	
04364	Seismic Retrofit - Superstructure	14,000	14,000	-	-	14,000	14,000	
04365	Seismic Retrofit - Concrete Superstructure	17,000	17,000	-	-	17,000	17,000	
04366	Seismic Retrofit - Steel Superstructure	19,000	19,000	-	-	19,000	19,000	
04367	Seismic Retrofit - High-rise	97,000	97,000	-	-	97,000	97,000	
04368	Mitigation for 043634 & 0436V4	324,000	324,000	-	-	324,000	324,000	
0436U	High Rise Portion (Changed to 0436V1)	625,000	625,000	-	-	625,000	625,000	
0436V	High Rise Portion	9,272,000	9,272,000	-	-	9,272,000	9,272,000	

** Information provided in table may change as additional data is obtained.

Attachment A

FY 2007-08 Seismic Retrofit Program Capital Outlay Support Allocation Request

Capital Outlay Support (Phases K,0,1,2,3)								
EA	Description	Projected COS Expenditures Through FY 2006- 07	Allocated COS Through FY 2006- 07	Over/(Under) Run of COS Through FY 2006-07	Requested COS For FY 2007-08	Total COS Requested Through FY 2007- 08	Current Contract COS Budget	Remaining Unallocated Contract COS Budget
		A	B	C=A-B	D	E=B+C+D	F	G=F-E
	Project Totals	28,090,000	28,090,000	-	-	28,090,000	28,090,000	-

** Information provided in table may change as additional data is obtained.

Attachment A

FY 2007-08 Seismic Retrofit Program Capital Outlay Support Allocation Request

Capital Outlay Support (Phases K,0,1,2,3)								
EA	Description	Projected COS Expenditures Through FY 2006-07	Allocated COS Through FY 2006-07	Over/(Under) Run of COS Through FY 2006-07	Requested COS For FY 2007-08	Total COS Requested Through FY 2007-08	Current Contract COS Budget	Remaining Unallocated Contract COS Budget
		A	B	C=A-B	D	E=B+C+D	F	G=F-E
San Diego-Coronado (For Information Only)								
02190	Seismic Retrofit	18,347,000	18,347,000	-	-	18,347,000	18,347,000	
02191	Main Superstructure	1,003,000	1,003,000	-	-	1,003,000	1,003,000	
02192	Abut 1, Tower, & Fnd, Pier 2-23	9,585,000	9,585,000	-	-	9,585,000	9,585,000	
02193	Tower & Fnd, Pier 24-32	1,416,000	1,416,000	-	-	1,416,000	1,416,000	
02194	East Approach Ramps	863,000	863,000	-	-	863,000	863,000	
0219U	Seismic Retrofit (East Approach Ramps) and Const.	2,007,000	2,007,000	-	-	2,007,000	2,007,000	
	Project Totals	33,221,000	33,221,000	-	-	33,221,000	33,221,000	-
Vincent Thomas (For Information Only)								
13810	Toll Bridge Seismic Retrofit Program	8,600,000	8,600,000	-	-	8,600,000	8,600,000	
1381U	Main Span & Approaches	7,775,000	7,775,000	-	-	7,775,000	7,775,000	
14521	Vincent Thomas Bridge	-	-	-	-	-	-	
	Project Totals	16,375,000	16,375,000	-	-	16,375,000	16,375,000	-
Program Indirect								
Indirect	Program Indirect	26,523,000	26,523,000	-	-	26,523,000	26,523,000	
	Project Totals	26,523,000	26,523,000	-	-	26,523,000	26,523,000	-
Toll Bridge Seismic Retrofit Program Totals								
		978,949,000	1,016,709,000		127,400,000	1,106,349,000	1,441,594,000	335,245,000

** Information provided in table may change as additional data is obtained.

Attachment B

FY 2007-08 New Benicia-Martinez Bridge Project Capital Outlay Support Allocation Request

Capital Outlay Support (Phases K,0,1,2,3)								
EA	Description	Projected COS Expenditures Through FY 2006- 07	Allocated COS Through FY 2006- 07	Over/(Under) Run of COS Through FY 2006-07	Requested COS For FY 2007-08	Total COS Requested Through FY 2007- 08	Current Contract COS Budget	Remaining Unallocated Contract COS Budget
		A	B	C=A-B	D	E=B+C+D	F	G=F-E
New Benicia-Martinez								
04-00601	Original EA	-	-	-	-	-	-	-
04-00603	New Bridge	87,981,000	88,100,000	(119,000)	1,827,000	89,808,000	92,600,000	2,792,000
04-00604	Toll Plaza	15,533,000	15,200,000	333,000	-	15,533,000	15,200,000	(333,000)
04-00605	I-680/Marina Vista	19,881,000	19,500,000	381,000	-	19,881,000	19,500,000	(381,000)
04-00606	I-680/I-780	29,023,000	28,300,000	723,000	995,000	30,018,000	28,900,000	(1,118,000)
04-00608	Mitigation Site	2,583,000	2,600,000	(17,000)	-	2,583,000	2,600,000	17,000
04-00609	South Approach	3,656,000	3,700,000	(44,000)	-	3,656,000	3,700,000	44,000
04-0060A	Modification to Existing	8,220,000	5,100,000	3,120,000	3,715,000	11,935,000	10,000,000	(1,935,000)
04-0060C	Replacement Planting	2,000	100,000	(98,000)	-	2,000	2,300,000	2,298,000
04-0060E	Wetland Planting	-	100,000	(100,000)	-	-	200,000	200,000
04-0060F	Install Trestle	2,000	2,253	(253)	-	2,000	2,000	-
04-0060G	Intercity Rail Efficiency	-	-	-	-	-	-	-
04-0060H	Establishing Existing Planting	93,000	100,000	(7,000)	203,000	296,000	300,000	4,000
04-0060X	Project Support	-	-	-	-	-	-	-
Project Total		166,974,000	162,802,253	4,171,747	6,740,000	173,714,000	175,302,000	1,588,000

**Information provided in tables may change as data is obtained.

Memorandum

TO: Toll Bridge Program Oversight Committee **DATE:** April 26, 2007

FR: Tony Anziano, Toll Bridge Program Manager, Caltrans

RE: Agenda No. - 5a, 1

Item- Yerba Buena Island
Labor Day Weekend Closure for Detour West Tie-In Work/ YBI
Viaduct Replacement

Recommendation:

Approve final communications message for the bridge closure required for the South-South Detour West Tie In/Yerba Buena Island Viaduct work that will be occurring Labor Day weekend of 2007.

Discussion:

Background

In February 2007, the Toll Bridge Program Oversight Committee (TBPOC) approved a strategy for retrofit of the Yerba Buena Island (YBI) Viaduct and construction of the first phase of the West Tie-In (WTI) for the South-South Detour (SSD) that will require a complete closure of the San Francisco-Oakland Bay Bridge (SFOBB) over Labor Day weekend of 2007.

In April 2007, the TBPOC approved a communications and outreach plan for the Labor Day bridge closure, except that the TBPOC deferred final decision as to whether the plan would definitely refer to a three day or a four day closure, with the difference being closing the bridge late Thursday night (August 30) versus closing the bridge Friday night (August 31).

Memorandum

The YBI Viaduct/WTI phase 1 work involves demolition of approximately 3,500 cubic yards of material and roll-in of a 350 foot long by 95 foot wide concrete superstructure (the top deck of the viaduct) that weighs 6,000 tons. The initial schedule developed in by the SSD contractor, CC Myers, indicated that 77 hours would be required for demolition and reconstruction of the YBI Viaduct including WTI phase 1 work. The first revision to this schedule reduced the required time to 72 hours and included 5 hours of float (time not planned for use but available if necessary) and assumed a start time of 11:59 pm Friday night, August 31.

CC Myers has developed a solid team to perform the work. Demolition services will be provided by Silverado Contractors, Inc. a demolition expert with a history of successful partnership in projects with CC Myers. The roll-in of the new YBI Viaduct structure will be performed by Mammoet, a contractor specializing in heavy lifts and transport of heavy structures. Mammoet is the world leader in heavy moves and lifting, and holds several world records for such lifts and moves. Mammoet has moved bridge structures before, including similar structures weighing 6,000 tons and 9,800 tons (this move included the superstructure and abutments).

CC Myers has refined their schedule and currently has expanded available float to 10 hours. The approximate breakdown of work is 46 hours for demolition, 12 hours for roll in, and 9 hours for paving and striping (46 demo + 12 roll in + 9 paving/striping + 10 float = 77 hours). This continues to assume a start time of 11:59 pm Friday, August 31.

Analysis

If the bridge closure time is pulled back to 7:00 pm on Friday, August 31, the bridge will be clear no later than 9:00 pm and work can begin. This will provide an additional 3 hours of float. CC Myers is in the process of securing a specialized crane system that will add efficiency to the demolition operation that will add another 5 hours of float. This will bring total float to 18 hours, 4 hours short of a complete day. Further refinement of planned activities may create

Memorandum

opportunities for additional float. For example, early closure of the YBI eastbound on ramp to the SFOBB will allow Mammoet to place the most difficult portion of the concrete foundation for its skid system before demolition work begins. This will require coordination with the Treasure Island Development Authority and the United States Coast Guard.

A three day time frame is also validated by comparable projects. The West Approach Labor Day 2006 demolition required 77 hours, but certain areas of work had 18 hours less due to work stoppages required for bus use of the SFOBB. The demolition involved 10,000 cubic yards of concrete. 8,000 cubic yards of concrete were recently removed on the West Approach project over a 30 hour period in a confined area. There are however, logistical difficulties on YBI not present in the West Approach demolition work. This would indicate that a period of 46 hours, the time required for demolition under CC Myers current schedule, is a very reasonable assumption for the YBI Viaduct/WTI demolition work.

A similar roll in operation was completed for a freeway overcrossing in Bellevue Washington. The structure was 328 feet long by 61 feet wide weighing 2,200 tons. Roll in was completed in 10 hours. Mammoet's prior roll ins of the 6,000 and 9,800 ton bridge structures were completed in under 10 hours. This indicates that the planned 12 hours for roll in is reasonable.

Attachment(s):

- 1) Silverado Contractors, Inc brochure
- 2) Mammoet brochure
- 3) 2 Informational Handouts for Bellevue Washington Roll In

SILVERADO CONTRACTORS INC.



SILVERADO CONTRACTORS, INC.
3233 PERALTA STREET, OAKLAND, CALIFORNIA 94608
(510) 658-9960 (510) 658-9961—FAX LICENSE #782547



SILVERADO CONTRACTORS INC.

SILVERADO STANDARD OF EXCELLENCE

At Silverado, we thrive on challenge. Silverado Contractors has the experience and resources necessary to meet any demolition challenge. Timely and accurate estimates, helpful value engineering, extensive project planning, safe and efficient execution, solutions oriented service; that's what we deliver. Our satisfied clients will attest to our excellence and professionalism in the field. No matter what demolition challenges you face, Silverado is up to the task. At Silverado, we strive to provide the best service from permits to punch lists, so our clients can focus on the next phase of the project.



SAFETY

Safety is a major concern at any demolition site, but at Silverado it is the foremost concern. We recognize that demolition sites can be dangerous places, but with pre-task planning, teamwork, training, communication and a safety attitude Silverado job sites are as safe as they can be. We continually train our employees with specialty safety classes in asbestos, lead, hazardous materials, fall protection and many other demolition related topics. If there is a potential risk, we have staff trained to manage it.



SCHEDULE

Time is money, and schedules are critical to every project. Silverado has the staff, equipment and resources necessary to meet or exceed any schedule we commit to. Diligent planning, proper job set up, daily management monitoring, skilled union labor and employees utilizing the newest equipment under the direction of tested supervision all yield a project completed on time exceeding your expectations.



RECYCLING

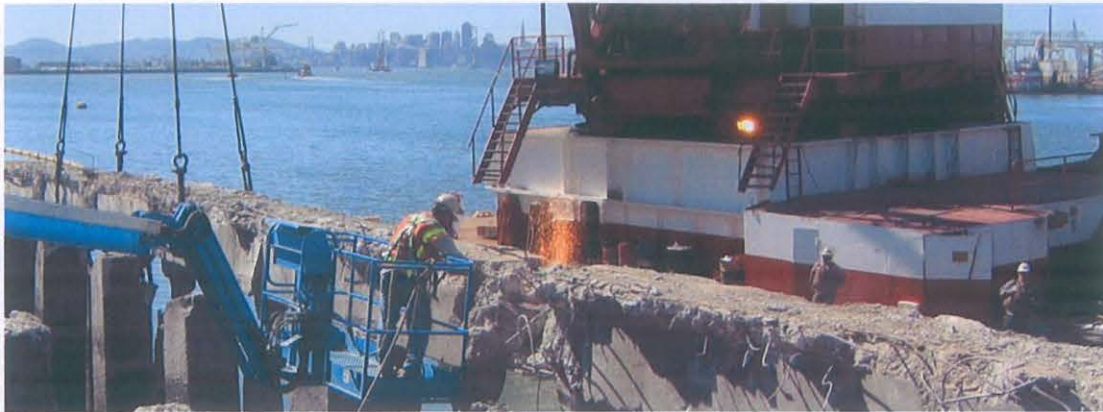
At Silverado we separate waste streams to ensure that we recycle or reuse as much material possible. Concrete, structural steel and timbers all have a value above that of basic demolition debris. We take pride in the fact that on the majority of our projects we exceed 75% in recycling or reuse of the material. By reselling salvaged material and equipment, Silverado can offer our clients the best value for a given job.



DEMOLITION CONTRACTING

Demolition is Silverado's primary focus. Our project engineers and estimators provide proactive solutions and competitive estimating services to meet any task while our project managers and superintendents ensure a level of safety and professionalism unmatched in the industry. From selective structural demolition to decommissioning of entire sites Silverado has the experience to plan and execute your project on time and on budget.





DEMOLITION

Since its inception in 2000, Silverado has successfully completed more than 260 Projects, totaling over \$60 million dollars in total contract work. Large-scale, complex demolition projects like the Carquinez Bridge, San Francisco's Airport Boarding Area "A", and the Port of Oakland's Berth 22 showcase the caliber and range of work that we execute. Every conceivable type of building demolition, bridge removal or site decommissioning project is within our area of expertise.



BRIDGE AND TRANSPORTATION

Steel, concrete, stone or wood, Silverado has extensive experience working on public works projects throughout the state. Silverado performs a wide range of bridge and transportation demolition work including complete bridge removal, bridge widenings and retrofits as well as airport runway and taxiway pavement removal.



SELECTIVE DEMOLITION

At Silverado we thoroughly plan every part of the project, anticipate the problems and come prepared with solutions. Silverado can professionally complete your selective demolition projects from extensive structural building renovations, condo conversions and multi-story seismic retrofits to removal of boilers, stairs, elevators, escalators, stacks, conveyors, as well as simple interior demolition projects. Silverado also performs drilling and installation of rebar dowels, concrete roughening, and surface preparation for building and bridge retrofit projects. From base isolations to bridge retrofits, we have the experience.



EXCAVATION AND EARTHWORK

Our capabilities do not stop at demolition; our operators are skilled earth movers as well. Silverado's capacity to perform demolition and then the subsequent foundation/site preparation maximizes your resources and reduces your subcontractor coordination efforts. Silverado performs mass excavation, grading, structural excavation, tight access excavation and backfill.



INDUSTRIAL/PLANT DEMOLITION

From retooling your production line to decommissioning your entire plant, Silverado can provide solutions. Completed projects have included removing substation equipment, salvaging pressure vessels, and dismantling steel structures from within actively operating facilities. Through careful planning and creative solutions, we can help modernize your facility without impacting your operation.



MARINE DEMOLITION

Located in the San Francisco Bay Area, **Silverado** has performed numerous projects over water. Our Port of Oakland marine demolition experience includes the removal of the 1,000 foot concrete wharf at Berth 22, the removal of the 300 foot long wooden FDR Pier at Jack London Square, and the retrofit of Berth 32/33, a 1,500 foot long concrete pier.

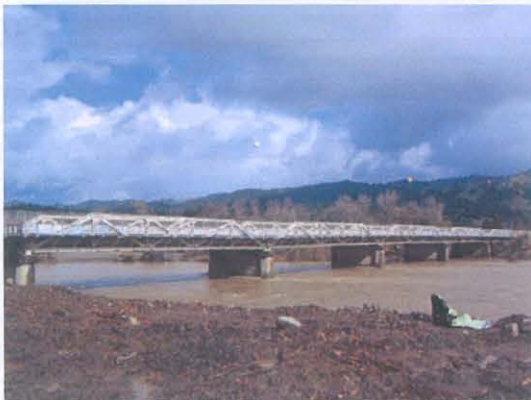
RUSSIAN RIVER BRIDGE

Job Type Bridge Removal



Scope

CC Myers contracted Silverado to perform an emergency demolition of the River Bridge on Highway 128 due to the damage caused by the New Year's Eve storm of 2005/2006. Demolition was completed 7 days ahead of the 25 calendar day schedule. Allowing, the new bridge construction to begin ahead of schedule in May. The demolition of the bridge was not only on the critical path for the new bridge construction, but also an emergency demolition. The speedy mobilization and planning allowed the thousands of residents who depend on the Russian River bridge daily to return to their normal schedules as quickly as possible.



CARQUINEZ EASTBOUND DECK REPLACEMENT

Job Type
Bridge Removal



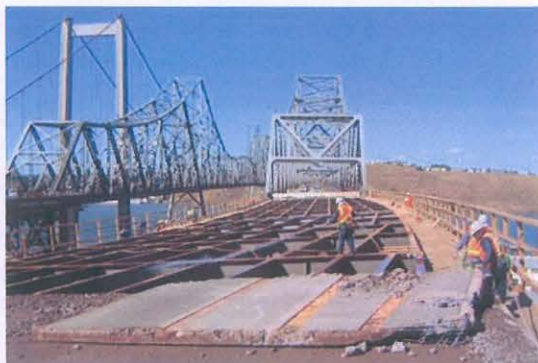
Scope

Silverado removed the Eastbound I-80 approach deck under contract from C. C. Myers. The reinforced concrete deck was on the critical path for the Carquinez Bridge replacement project. Facing liquidated damages of \$50,000 per day, and an 18 calendar day schedule, Silverado completed the removal in 12 days, allowing the replacement project to be completed on time, in 36 days.

CY/Tons Removed

~350 Tons of steel

~3000 CY Concrete



CARQUINEZ BRIDGE

Job Type
Bridge Removal



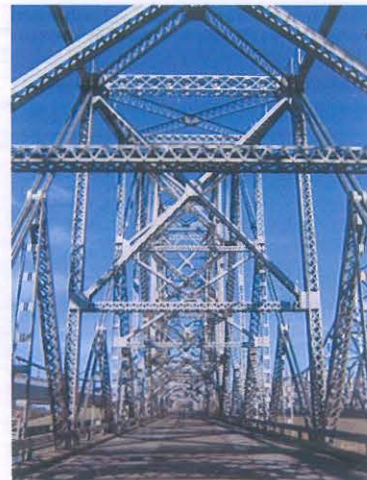
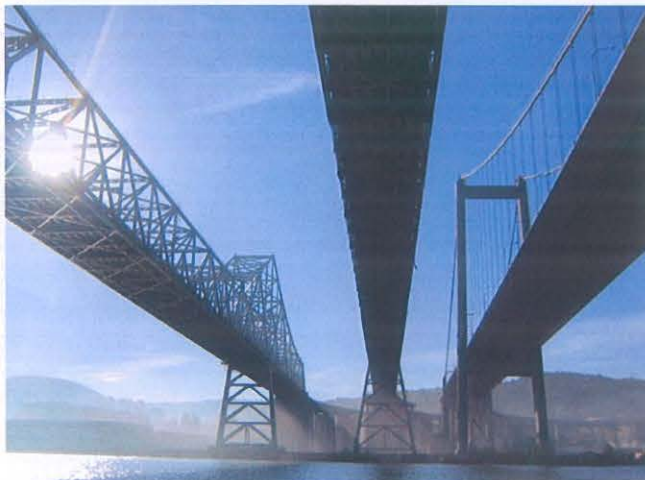
Scope

Under contract from California Engineering Contractors, Silverado removed the concrete deck and steel stringers on the suspension span of the 1927 truss bridge, and the entire westbound approach structure.

CY/Tons Moved

~2,500 Tons steel

~10,000 CY of concrete



BAY BRIDGE

Job Type
Bridge Removal



Scope

Following the construction of a temporary detour structure from the Bay Bridge to the Yerba Buena Island Tunnel, Silverado Contractors will be removing portions of the existing Bay Bridge on Yerba Buena Island. The removal of the four double deck truss spans and adjoining concrete viaduct will allow completion of the transition structure from the east span currently under construction to the Yerba Buena Tunnel.

MAXWELL BRIDGE

Job Type
Bridge Removal



Scope

C.C. Myers contracted Silverado to remove the 50 year old Maxwell Bridge. A new span had been built beside it. Silverado cut the bridge into 5 large pieces, lowered the sections utilizing a barge mounted crane, and transported downstream barges to a local steel recycling facility. The demolition work occurred over one of only five navigable waterways in California, and as such, special care had to be taken when other vessels had to cross the straits spanned by the bridge.



CROCKETT INTERCHANGE

Job Type
Bridge Removal



Scope

Silverado removed three elevated approach ramps to the Carquinez Bridge: the existing eastbound and westbound on-ramps and the westbound off ramp. The connecting ramps were ~1,200 foot long concrete spans on steel composite girders. The westbound off ramp to Crockett was a 900 foot long steel truss bridge. All told, over 3000 tons of steel and 3000 tons of concrete were hauled away.



Worldwide specialists in heavy lifting and transport

Meeting the challenge, finding the solution



 **MAMMOET**



This is Mammoet

Mammoet provides tailor made heavy lifting and transport solutions. A customer driven company with Dutch roots, the enterprise has evolved to a world-class player that sets trends and records. In virtually every part of the world, Mammoets presence is visible both onshore and offshore. Our regional offices serve customers in various markets around the globe. The main economic sectors covered by Mammoet are the petrochemical industry, civil projects, power plant facilities, offshore business and marine projects. Mammoets activities range from turnkey projects to equipment rental. In addition, Mammoet Trading is renowned for trading new and used, yet overhauled, equipment.



Our mission

Mammoets mission is to be the best full service provider in the global market for engineered heavy lifting and multi modal transport. To achieve this we rely on a vast and solid range of expertise and equipment to handle both standard and one-of-a-kind contracts, with dedication and passion of all concerned.

In addition, our years of experience, our advanced engineering 'think tank', the high level safety regulations and our innovative, approach ensure the successful accomplishment of any activity.

Mammoet's worldwide organization

Mammoet applies a decentralized organization model with regional establishments for the Americas, Europe/Africa, the Middle East and Asia. To service customers best, these offices can deploy activities fairly autonomously with a large and versatile range of equipment at their own disposal. Next to these establishments, the organizational model shows a fifth, yet essential, entry: Mammoet Global. Its main task is to direct and orchestrate major projects that involve operations in different regions. For reasons of efficiency and short cycle times, such projects need central management. Mammoet Global also has its own fleet of equipment under direct control. Among these are 15 of the biggest cranes in the world.

Our assets

At the heart of all successful operations is the professionalism, skills and expertise of our employees - Mammoets most precious asset. They show impressive flexibility, improvisation talents and a cooperative attitude. An open mind and communications network have made Mammoet a trustworthy partner and team player that respects others' interests. Mammoet believes in pre-engineering of concepts and solutions for any project, thus saving time and cost to the benefit of the customer. In effect, Mammoet is involved in complex transport and lifting operations at a very early stage. This co-designing and co-engineering with the customer representatives and experts leads to better and more cost effective solutions. We maintain a highly respected Quality Safety Environment Program. It is comprised of standards that are always upheld. They cover health, safety, environmental issues and quality definitions for the technical performance.

Partner in petrochemical projects

Driven by the optimization of performance ratios, the scale of petrochemical plants increases. This implies a need for larger vessels, reactors or flare stacks that require services for transport and positioning. Mammoet has developed extensive specialists expertise to serve the petrochemical industry.



From-factory-to-foundation

Mammoet is renowned for its full services from-factory-to-foundation. As the main contractor for the total chain, Mammoet engineers, executes and manages all necessary load-outs and load-ins, transport over roads, water and railways, and any lifting or positioning job that is required to deliver the modules. We take care of all paperwork, logistics and subcontracting. Along with representatives of customers and contractors, we participate in multidisciplinary teams to secure overall planning and deadlines, while offering supporting crane and transport services to other contractors. Safety is always a top priority.

Engineering

Because of the close interaction between our engineering department and those of construction companies, the latter can design modules that could be moved and lifted more cost effective. Mammoet stretches the design limits by providing high capacity transport and lifting equipment.

Our services

Examples of projects that are supported by Mammoet are:

- The construction of new plants at new development sites.
- The relocation of existing plants.
- The extension and upgrading of existing plants.
- Maintenance processes that require the shut down of facilities and the exchange of used modules with replacement units.



Columns at Gijón

Locations: Spain, Saudi Arabia

Main equipment: Platform Twin Ring, talling frame, SPMTs, ballasting and jacking equipment

Highlight: In this factory-to-foundation job, Mammoet picked up four different columns at Gijón, Spain. After jacking up the columns, SPMTs moved under the structures and put them onto barges. These sailed to a sea-going roll on/roll off vessel that took over the cargo. Mammoet was also responsible for their erection and positioning in Saudi Arabia, in addition to three more columns. Only the Platform Twin Ring HD in Superlift configuration, assisted by the tail frame, was suited to handle these giants up to 1,379 tons.



The Archway monument

Location: United States of America

Main equipment: SPMTs, jacking and skidding systems

Highlight: The Archway Monument symbolizes the historic importance of the various trails that 'bridged' the nation. To get the three-story high and 100 meter long preassembled structure of 1,500 tons in place, Kiewit selected the SPMTs of Mammoet from Rossharon, Texas, as the safest option for transport along Interstate 90. The structure was lifted 7 meters with hydraulic jacks and then skidded onto the SPMTs - a procedure that was basically reversed to deliver the Archway onto its foundations. The disruption of traffic along this busy highway was limited to just one night.

Dedicated to civil projects

In many areas the infrastructure of roads, railways and waterways is being upgraded and extended. This will facilitate a more efficient and safe transport of cargo and people, especially in densely populated areas.



Years of experience

Our multi-modal transport experience, along roads, railways and waterways, together with facilities for lifting, skidding and jacking heavy loads, ensure our position as full service provider in the civil market. From factory to foundation we manage all necessary handling of cargo. Mammoet is experienced in handling heavy prefabricated elements like concrete girders or steel structures that are assembled on site. This experience extends to constructing, relocation or dismantling of various (parts of) buildings and industrial facilities.

Projects and services

Mammoet operates an extensive and versatile fleet of equipment that perfectly matches the transport and lifting needs in civil works. Examples of projects that frequently show Mammoet involvement are:

- The construction of highway and railroad infrastructure, with transport and positioning of concrete girders and other prefabricated elements.
- The transport and assembly of concrete and steel bridges, parts of all kind of buildings or even complete buildings.
- The relocation and assembly of heavy gantry cranes.
- The transport, load-out and assembly of ship sections, or small ships like yachts.

Focal points

Working on projects in the civil sector requires specialized equipment and trained crews. If engineering and logistics experts of Mammoet get involved at the development stage, it will ease quick and flawless operations that can be managed effectively. Especially road transport of outsized cargo requires accurate planning. We handle, for instance, all the negotiations with authorities for the temporary removal of lampposts and street signs. It includes cooperation with police forces for security to close road sections.



Power at Bethlehem

Location: Bethlehem, Pennsylvania
USA Main equipment: Heavy duty railcar, SPMTs, strand jack tower, skidding system, weighing system.
Highlight: Alstom Power awarded Mammoet a contract to deliver and install two steam turbine generators of 165 tons, manufactured in Mannheim, Germany. Before loading onto a heavy lift vessel, Mammoet took their weights with the special weighing system. At the Port of Baltimore the cargo was loaded onto a special heavy duty railcar and transported to the jobsite. The unloading was done with a gantry crane and SPMTs moved them to a storage area. Mammoet assembled a strand jack tower that lifted the generators 10 meters. From there, they were skidded over 30 meters horizontally before another gantry crane took over, moved the generators another 2 meters and lowered them onto the foundations.

Presence in the power sector

Power plants run either on fossil fuel, nuclear power or a sustainable energy source like wind. Mammoet has established a strong reputation in all segments of the power industry.



Modules for any power plant are highly specialized facilities that are manufactured by just a few firms. In many cases, the heavy and outsized modules need complex transports to reach their destination, be it along roads, railways or overseas. This is a demanding job so our customers prefer an end-to-end, safe solution for the transport and on-site assembly. This is exactly what Mammoet can offer.

A full service range of projects

Mammoet services extend to different types of projects like:

- The construction of new fossil fuel power plants in densely populated areas or at remote locations.
- The maintenance and/or extension of existing fossil fuel power plants.
- The assembly of on and offshore wind turbines.
- The demanding maintenance of nuclear power plants under exceptionally strict safety rules.

High quality standards

The factory-to-foundation concept enables Mammoet to take care of items at the manufacturers' premises and deliver the cargo, positioned and assembled, at any place in the world. The nature of the objects may differ from generators, boilers, turbines, and transformers to other components. To facilitate the multi-modal transport, Mammoet applies conventional and self-propelled trailers, ballasting and mooring equipment for transport by barge, dedicated heavy-duty railcars, and containerized equipment that can be dispatched quickly to any place. High corporate Quality Safety Environment (QSE) standards certify Mammoet to execute operations at nuclear power plants.

Focus on offshore activities

Just prior to the final positioning at sea, production platforms for the exploration of oil and natural gas are assembled almost to the point of completion. Such strategy requires the ability to move and lift large and heavy items at the yard. This is one of the special services Mammoet can provide.

The Mammoet activities in the offshore industry cover accurate and safe execution of transports, load-ins and load-outs, and assembly of very large and heavy items. Examples are the truss shaped jacket structure and topsides that include living quarters, production equipment and storage areas.

Offshore projects and services

The project experience with offshore activities covers:

- Load-in, transport and load-out of huge jackets.
- Handling and assembly of topside components, such as living quarters.
- Scheduling and management of all transport and lifting logistics.
- Dedicated services like sea fastening, ballasting and mooring operations.
- Load-out manuals that exactly describe all stages of the operations.

The right experience, the right equipment

The capabilities of the SPMTs, which can be linked together in huge arrays, are at the heart of many Mammoet successes in offshore operations. Moving sideways, in circles or compensating for elevation differences on the ground with hydraulics - it is all possible. The central computer control guarantees all loads and pressures to stay within design limits. High-capacity jacking systems enable enormous objects to be taken safely from their supports, lowered on the transporters, and delivered to new supports where needed. Heavy lift cranes deliver components on topsides or seagoing vessels at elevations over 100 meters. Computer-controlled ballasting equipment constantly monitors the attitude of barges and compensates for tidal changes if necessary.

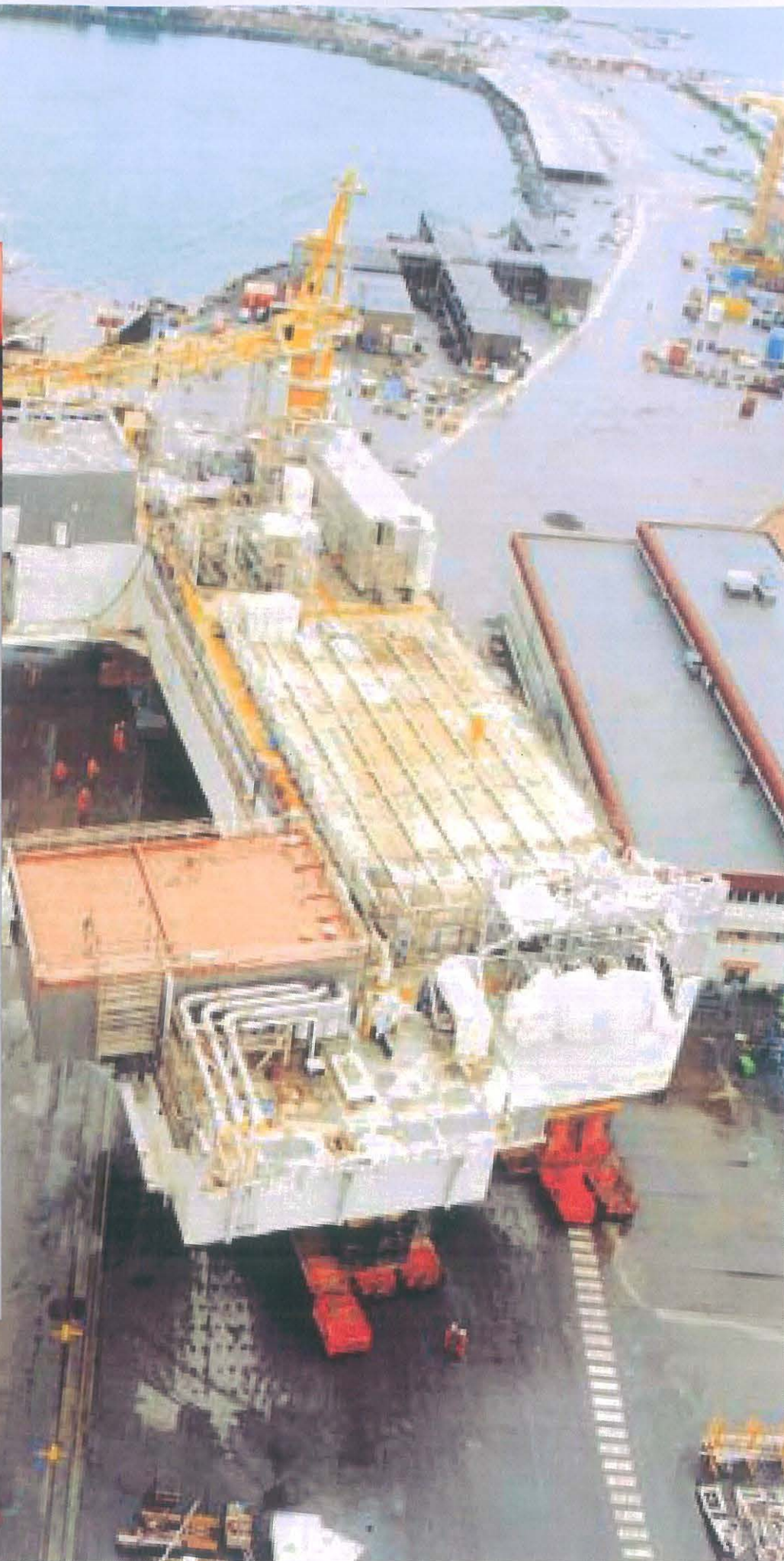
In addition, Mammoet operates skidding systems and strand jack systems to lift, lower or slide oversized loads, fully computerized ballasting systems for barges, and weighing systems for determining the mass and/or the center of gravity of structures.



Various operations at Aker Stord

Location: Aker Stord and Egersund,
Norway **Main equipment:** jacking
system, SPMTs, ballasting system

Highlight: Mammoet performed load-in, load-out and site move operations of utility module parts for an oil production platform at Aker Stord. First, a 3,850 tons module was lifted 3.4 meters with 12 jacks and then loaded out onto two barges. Then a drilling module was lifted 0.6 meters before load-in onto 12 pre-installed jacks that raised it 2.8 meters. Subsequently, this 4,750 tons module was loaded-out again, matching the utility module already on the barges. In addition, Mammoet handled heavy modules at Kvaerner, Egersund, like the site move of a 4,250 tons process module, the load-out of a 950 tons P50 module, and the load-out of the 1,600 tons living quarter. This module was rotated 90 degrees for line-up in the following assembly process at Aker Stord. Load-in and load-out operations required accurate ballasting to keep the stacks level. All units will form a 25,000 tons oil production platform.





Kursk salvage, 'the impossible job'

Location: Murmansk, Russia

Main equipment: strand jack system, heave compensator system, pontoons, barges, tugboats, special equipment

Highlight: Mammoet achieved the lifting of the Russian nuclear powered submarine Kursk that had sunk due to an onboard accident, taking the lives of all its crew. The 'impossible job' had to be done in Arctic waters over 100 meters deep and frequently rocked by severe gales. Mammoet's engineering experts designed a salvage concept, including our 26 computer controlled 900 tons capacity strand jacks and a specially designed system that could compensate for the swell. These were installed on a pontoon. Special clamps were lowered through holes in the pontoon into holes that had been cut in the hull of the submarine. Once raised, the Kursk was lifted and secured against the bottom of the pontoon and transported to Murmansk. It was delivered into a dry-dock applying another specially developed ballasting-and-pontoon concept.



Special marine operations

To perform heavy lifting and transport jobs without the support of stable soil is a challenge indeed. Mammoet set an impressive track record in marine operations.



From bridge installation to wrecked ships

Advanced engineering capabilities and a huge range of specially developed additional facilities and equipment like pontoons and floating cranes, enable Mammoet to offer tailor made solutions for special lifting projects on the water surface.

Examples of successfully completed marine jobs are the construction of large bridges between isles, the (de)commissioning of used offshore facilities, and removal of ship wreckage. In all cases, Mammoet re-uses its experience in ground-based operations, like project management, technical engineering and solution development. Thanks to the extensive resources, project teams are established quickly and will have adequate equipment to their disposal.

Mammoet Van Oord

Mammoet is proud to participate in the recently established company Mammoet Van Oord. This company owns and operates a special developed and built jack up barge for a variety of marine operations.

Examples of marine services are:

- Turn key solutions for the offshore installation of windmills, including all onshore transport, the installation of scour protection around the wind turbines and the installation of power cables between the wind turbines and the shore.
- The transport, lifting and positioning of concrete or steel foundations and girders for long bridges.
- The disassembly and removal of parts of offshore platforms, as part of a decommissioning process.
- Salvage operations of dangerous wreckage that could spill oil or nuclear waste.

Mammoet Van Oord owns a sophisticated jack up barge, called 'Jumping Jack'.

This unique seagoing barge with a platform of 91 x 33 meters is the largest in the world. At each corner is a 42 meters tall leg. Hydraulic winches can lift or lower these legs and elevate the entire platform out of the water, even with a full load of 4,000 tons.

The Jumping Jack thus provides a stable working platform that allows operations even in severe weather conditions with high waves. The standard 1,200 tons onboard crane provides sufficient capacity to support a range of jobs.



Rental activities

Rental activities are part of Mammoets core business. We support numerous local projects that require mostly versatile smaller cranes. Also at large construction sites, Mammoet provides complete fleets of smaller and larger cranes, transport vehicles and additional equipment.



The service to mobilize a huge range of equipment to serve rental activities is often considered a competitive advantage. It offers customers extra on-site flexibility and may support other contractors to achieve better streamlined scheduling and logistics. Examples are found in all markets that Mammoet covers.

Petrochemical sector Many activities related to maintenance, exchange of items or extension projects must be executed in parallel. Mammoet developed a unique plant-stop-concept based on the pre-engineering of all major transports and lifts. In many cases, contracts are accepted on a lump sum base.

Offshore sector During the construction and assembly of large platform elements, craneage and transportation vehicles are needed virtually all the time. Mammoet assists in selecting the most versatile and economic fleet and ensures its availability throughout the production schedule.

Power sector Power plants need regular maintenance, safety checks and the exchange of worn items with new parts. It is required to minimize the downtime. An accurate logistic schedule and adequate transport and lifting capacity enable to meet this constraint.

Civil sector As the scale of civil works increases, many items are assembled off-site and need transportation to and installation on the final construction site. As a lot of equipment is needed at the same time Mammoet's broad range of equipment is often rented to eliminate the risk of delay.

Cranes and crews

Most rental telescopic cranes are in the range of 30 - 800 tons capacity and can be dispatched quickly along roads and railways to any destination. Reservations and logistics are managed from local offices. For capacities over 500 tons, Mammoet offers a choice of lattice boom, crawler and ring cranes. The reservations and logistics are managed by Mammoet Global, in co-operation with the regional offices in Asia, the Americas, the Middle East and Europe/Africa. An advantage of Mammoet rental contracts is that the unexpected need for extra equipment, immediate repair and replacement, is ensured at all times.

Mammoet also provides trained crews to operate the cranes and transporters. The in house training programmes for operators and riggers guarantee that the high corporate standards for safety and service stay in effect at all times. They ensure the compliance with Mammoets QSE standards and thus contribute to quick and safe operations.

Equipment management

The Equipment Management Department (EMD) is one of the most important directorates within the Mammoet organization. It is responsible for the complete management and maintenance of our equipment fleet.

Renowned for our innovation

Part of our EMD is often referred to as the 'think tank' of Mammoet. It is responsible for 'inventing' new equipment for new solutions, or extensions for components that are already in service. Valuable solutions involve easy transport, mostly fully containerized, and impose a low Total Cost of Ownership. We are renowned for the design and construction of hydraulic, electrical and mechanical systems. Examples are the ring crane concepts, the containerized cranes, tailing frames and the design of the Jumping Jack installation barge. In addition, Mammoet designed the salvage concept to lift the Russian submarine Kursk with 26 computer controlled strand jacks, each with 900 ton capacity.

Maintenance

Although regular maintenance must be accomplished according to schedule, the impact on current and future operations should be minimized. The strategy is to replace components before they break down, rather than having these repaired on the spot. This is organized with our maintenance system under control of the EMD. The department manages a large stock of spare equipment and components such as gearboxes and engines, both in regional storage areas and at the Mammoet HQ premises at Schiedam, the Netherlands. Delivery processes run 24 hours a day, 7 days a week.

Trading

The purchase, overhaul and sales of third-party cranes and other items, like platform trailers and trucks, benefit from our facilities to maintain our own equipment. We overhaul all equipment according to corporate standards. Hence, 'approved by Mammoet' is the best quality mark a new owner can get. The trading activities include a broker role. Mammoet always issues certificates of safety and proper documentation.



Servicing customers around the world

Mammoet offers over 35 years of experience in heavy lifting and transport jobs all around the world. Our QSE standards are the highest in the industry and we are renowned for our hard work, our innovative thinking and flexibility. We are proud of Mammoets staff and crew and are very pleased with the appreciation of our customers.



"SGT was very pleased with the skilled personnel provided by Mammoet. They conducted themselves in a professional manner while performing qualitatively at a high level. We appreciate their cooperation in making the Unit II Steam Generator Replacement a safe and successful project, and are looking forward to future business relationships."

The Steam Generating Team

"We would convey our appreciation and satisfaction to your company for the successful load-out, transport and erection of the sixteen modules of our project. We feel, Mammoet displayed good safety practices, excellent cooperation and outstanding knowledge of the work. Again, thank you for a job well done and we look forward to working with Mammoet in the future."

Fluor Daniel Engineers and Constructors Ltd.

"The contribution of Mammoet to this success is significant. We found it very useful to cooperate with your highly specialized engineers already from the start of the module construction to plan and optimize the transport at an early stage."

Statoil

"Mammoets performance in the execution of all stages of the contract was excellent, demonstrating a high quality standard of engineering and operation, together with safe performance. It all resulted in an early completion of the work. Mammoet, their workers as well as their management, have been strong, cooperative and flexible partners at any time. The outrageous execution of their work means for Linde - being main contractor - an important milestone for the successful completion of the project."

Linde AG

"We would like to express our compliments and satisfaction with the way you and your colleagues contributed to the restart of our production plants. Especially your professional attitude, dedication to safety, quick response and personal commitment were all-essential to proceed with the resume of our production as scheduled."

Shell Nederland B.V., The Netherlands

"We would like to congratulate Mammoet on the superlative performance of your equipment and crew during the load-out. Never has P.T. McDermott Indonesia dealt with a subcontractor who arrived better prepared, or performed as professional as the Mammoet load-out crew."

P.T. McDermott Indonesia



Activities

Rental activities

Contracting/Projects

Equipment trading

Presence

Americas

Europe

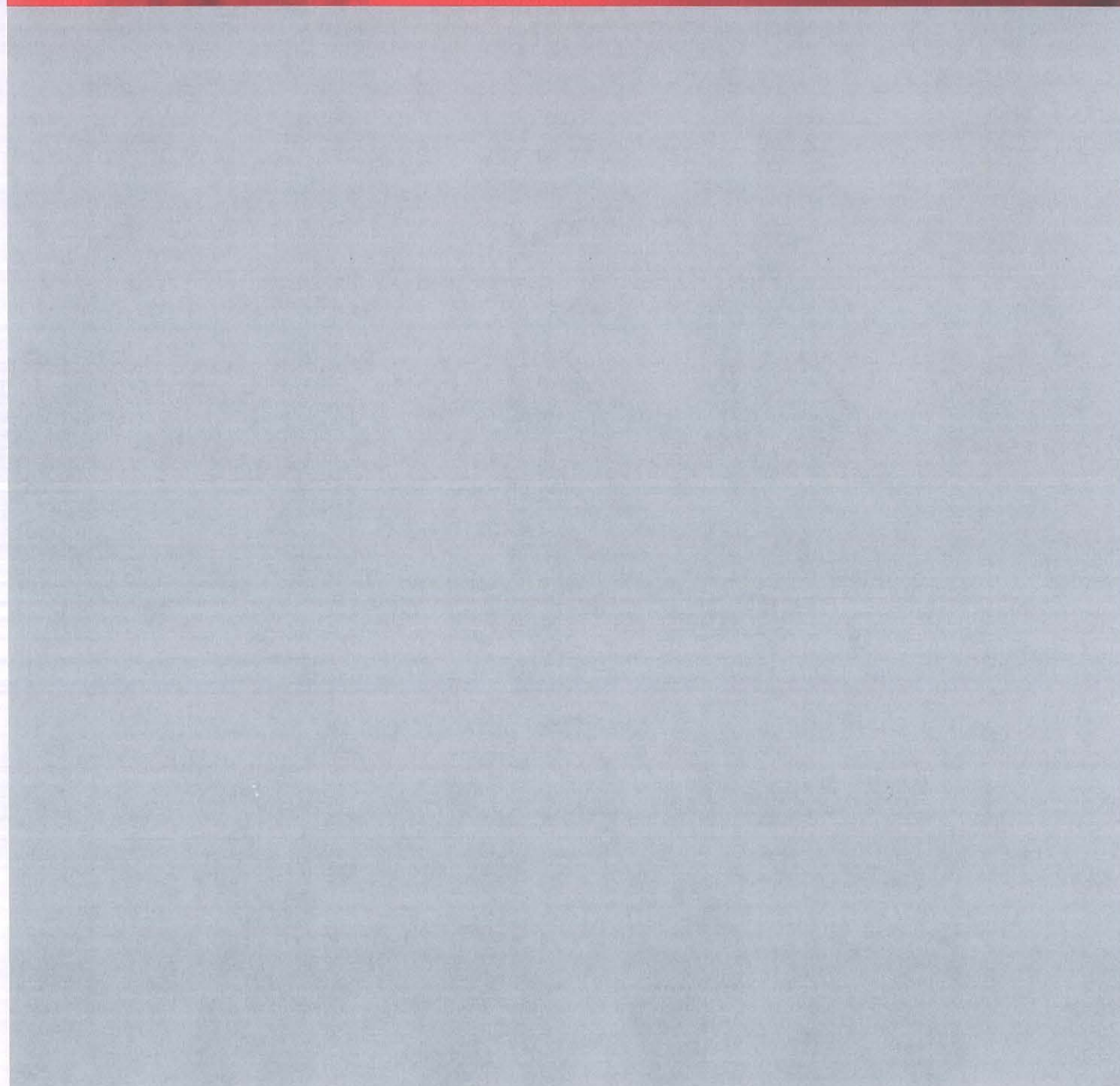
Global

Middle East

Asia

● Establishments







INSIDE THIS ISSUE

Rolling the NE Eighth Street Bridge

By Larry Kyle, P.E., and Joyce Lem, P.E.

It's far from an everyday occurrence to roll an entire bridge along a busy section of freeway, but that is precisely what a team of engineers in Bellevue, Wash., planned to do when it came time for final design of the NE Eighth Street expansion over Interstate 405.

NE Eighth Street is the main east/west arterial for Bellevue and the primary access route between I-405 and the city's downtown business district. To provide room for a new set of high occupancy vehicle (HOV) direct connector ramps on I-405, the existing NE Eighth Street bridge had to be replaced. And doing so without causing significant disruption to traffic on either roadway required a unique solution: "rolling" 4.4 million pounds of concrete and steel a distance of 64 feet.

The project is part of the \$139 million infrastructure package called Access Downtown, which will improve access to and from I-405 in Bellevue. Access Downtown is a partnership between Sound Transit, a regional transportation agency that involves three Puget Sound counties; the Washington State Department of Transportation (WSDOT); the city of Bellevue; King County Department of Transportation's Metro Transit Division; the Federal Highway Administration; and the State Transportation Improvement Board.

EXISTING AND NEW STRUCTURES

The original NE Eighth Street bridge was constructed in 1959 and widened in 1973. It crossed eight lanes and the on/off ramps of the I-405 freeway with six spans of precast concrete girders and a cast-in-place concrete deck. Cast-in-place concrete abutments and multi-column bents on spread footings supported the superstructure. Total length of the



The NE Eighth Street bridge prior to rolling the south half bridge (the left half in this photo) into its permanent position. The south half bridge served as a detour route during the first three stages of construction.

bridge was 292.5 feet and total width was 103 feet. The structure carried three lanes of traffic eastbound and three westbound with sidewalks on each side.

The new bridge needed to be limited to two spans and the length increased to 328 feet to make space for realigned traffic lanes and ramps and for future widening of I-405. The bridge also had to be raised approximately three feet to achieve the required vertical clearance over the new on/off ramps to the south of the project. To accommodate the heavy traffic

on NE Eighth Street, the width of the bridge was increased to 121.5 feet, thereby adding a vehicle lane in each direction.

The new bridge superstructure is a two-span built-up steel I-girder section with composite concrete deck. The abutments and four-column center pier bent are reinforced concrete on spread footings.

CONSTRUCTION STAGING

An initial planning study, performed by a different firm, proposed replacing the structure under a complete demolition/replacement scheme



The new NE Eighth Street bridge with both halves in their permanent locations (the south half bridge is on the right in this photo).

4 Construction Phase Services Garner Results in Kansas City



7 Bridge Tips - Top Flange Lateral Bracing For Steel Tub Girders

NEXT ISSUE



The next issue of BridgeLine will include features on concrete segmental bridges, movable bridges and more.

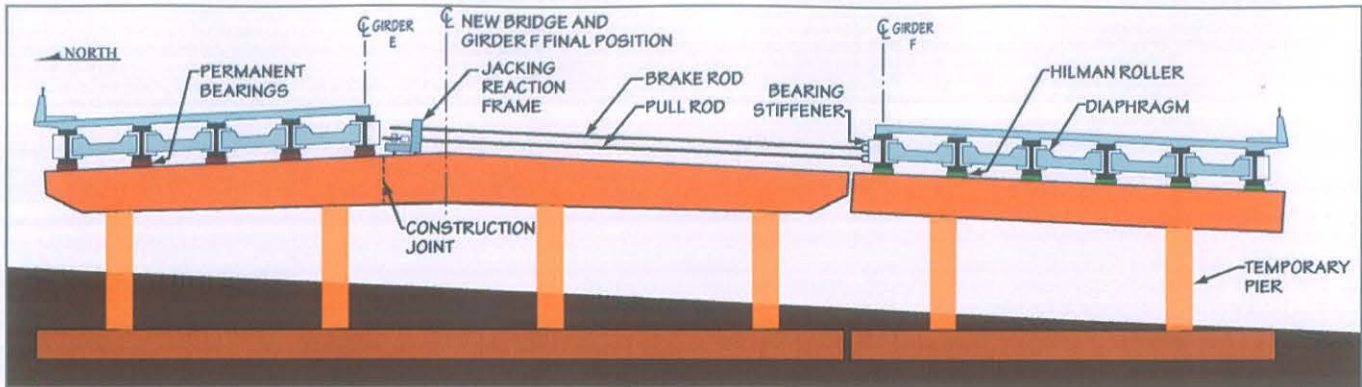


Figure 1 - A sectional view of the NE Eighth Street bridge prior to rolling the south half.

or conventional staged construction with half of the bridge removed and replaced at a time. A 12-month loss of NE Eighth Street was expected under the complete demolition/replacement scenario and 18 months of restricted access and reduced capacity were anticipated under conventional staged construction. The city was not satisfied with either construction sequence because of the potential to cripple eastbound and westbound traffic and negatively impact business operations in Bellevue.

To alleviate the issue of closing down traffic for an extended period, the HDR team that was brought in to complete the final design devised a plan to build one of the bridge "halves" in a temporary location directly south of the existing bridge. This south half could be used to divert traffic during the demolition of the existing structure and construction of the new north half. The south half would then be rolled to its permanent location and both halves

could resume normal operation. Construction staging was as follows:

- Stage 1: Build the permanent south half of the new bridge on temporary piers just to the south of the existing bridge.
- Stage 2: Shift the eastbound traffic lanes onto the new south half bridge and westbound lanes onto the existing south half bridge. After completing the traffic shift, demolish the north half of the existing bridge.
- Stage 3: Build the permanent north half of the new bridge in the same location where the old north half bridge was just demolished. Then shift westbound traffic onto the new north half bridge once construction is completed, and demolish the remaining section of the existing bridge.
- Stage 4: Build the new permanent piers for the south half of the permanent

structure in the location previously occupied by the old south half bridge. Jack the newly-constructed south bridge off of its temporary piers and onto rollers. Relocate the new south half bridge approximately 64 feet north to its permanent location. Shift eastbound traffic onto the south half bridge and complete the closure pour in the concrete deck between the north and south half bridges.

As a result of this design and staging, the potential 12-month full closure of NE Eighth Street was reduced to one weekend. Full I-405 closures as well as lane and ramp closures were limited to nighttime operations and several weekend windows (for traffic shifts and bridge relocation). The only exceptions to this were three specific periods for construction operations. Other lane and roadway closures within Bellevue were limited to non-peak hours, nights and selected weekend windows. The existing three lanes for each direction of NE Eighth Street were maintained throughout construction.

ROLLING THE BRIDGE

Rollers have been used to move superstructures in the past, but there were significant new challenges of weight and geometry involved with the NE Eighth Street project. The superstructure to be moved consisted of a 61-foot-wide, six-girder cross-section with deck slab and sidewalk and weighed 2,200 tons. The final roadway cross-section has a 2 percent crown at the roadway centerline, so the top of the temporary and permanent pier cap beams also were sloped at 2 percent. Accordingly, the superstructure had to be rolled uphill against the 2 percent grade.

The bridge was pulled to its final position using a system of high-strength rods (Grade 150 ksi), hydraulic jacks and reaction frames mounted on the permanent crossbeam and abutment seats (see Figure 1). Allowing for a maximum of 5 percent friction in the rollers and the 2 percent cross-slope, pull loads of 58 kips at each



Bridge rolling: the worker at far right manually tightens the nut that fixes the pull rod to the jacking beam. The two jacks bear against the fixed reaction frame, thereby pushing the jacking beam and pulling the bridge superstructure the 12 inches of the jack stroke.



With the bridge lifted by hydraulic jacks, the rollers were aligned under the girders. The sole plate for the permanent bearing is visible behind the roller.

abutment and 192 kips at the center pier. A 1.25-inch diameter rod at each abutment and a 1.75-inch rod at the center pier were used to pull the bridge. As a backup to these rods, additional 1-inch and 1.25-inch brake rods were installed parallel to the pull rods – connecting the bridge to the reaction frame at the abutments and center pier, respectively.

At one end, the high strength rods were connected to the bearing stiffener of the girder that would eventually be positioned at the bridge centerline (see photo at right) using a steel bracket bolted to the bearing stiffener. The rods extended through a steel frame, which was mounted on the permanent crossbeam and abutment seats next to the non-moving half of the bridge (Figure 1). Hydraulic jacks acted against the frame and a jacking beam. The jacks, jacking beam and rods “pulled” the superstructure with each 12-inch stroke of the jack. The rods had two sets of nuts that were alternately tightened against the reaction frame or the jacking beam with each stroke. Periodically, the ends of the high-strength rods were cut off to avoid running into Girder E.

Rollers supported each girder at the center pier and abutments. The rollers were set in channel beams on top of the center pier and abutment seats. Hydraulic jacks under the steel diaphragms between the girders lifted the superstructure approximately one-quarter inch so the rollers and shims could be installed (see photo above).

RESULTS

Over one weekend in September 2003, the south bridge was rolled onto its permanent substructure. Starting Friday evening, NE Eighth Street was closed, and I-405 traffic routed around the bridge via the on/off ramps. Rolling the bridge took 10 hours and by mid-morning on Saturday, both I-405 and westbound NE Eighth were reopened.

During the rest of the weekend, bearings were installed, and the eastbound approaches to the bridge were graded, paved and striped in time to be open for early Monday morning commute.

As a result of avoiding lengthy closure of an important arterial roadway, the NE Eighth Street bridge project was presented with the Miracle of the Year Award by the Bellevue Chamber of Commerce

Larry Kyle, P.E., can be reached at HDR's Bellevue, Wash., office at (425) 450-6369 or e-mail larry.kyle@hdrinc.com

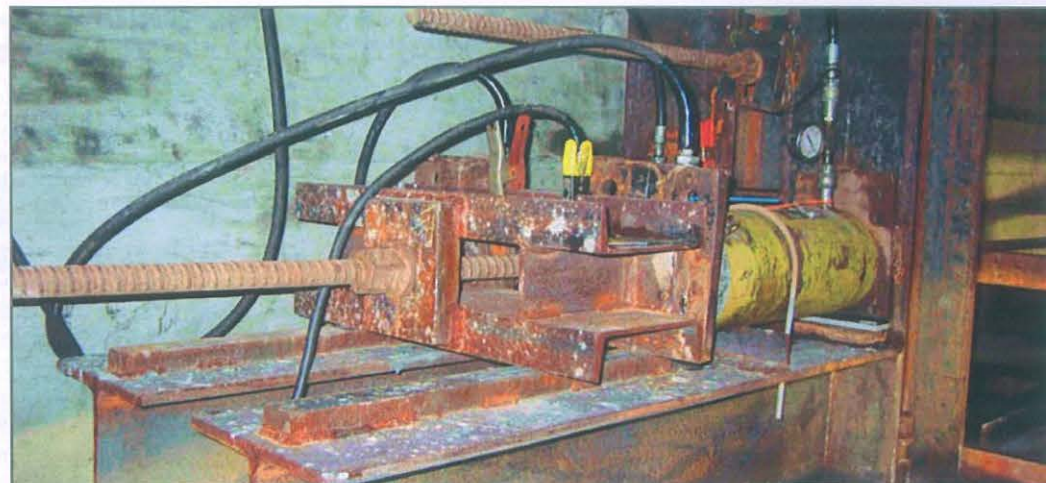
Joyce Lem, P.E., can be reached at HDR's Bellevue, Wash., office at (425) 450-6345 or e-mail joyce.lem@hdrinc.com

To see a time-lapse video of the bridge being rolled and the corresponding roadway approach work, visit www.hdrinc.com/engineering/Transportation/Bridges.htm

To learn more about the NE 8th Street bridge rolling and other Access Downtown projects go to www.accessdowntown.com



Above: Connection of the high strength rods to the south half bridge. The other ends of these rods were attached to the jacking frame and jacking beam. Note the rollers and bearing, which are visible in the lower portion of the photo.



Left: A closer view of the jacking frame and jacking beam. The beam slid as the jack pistons extended. The bearing plate, nut and washer assembly locked the pull rod against the jacking beam.



Bellevue: I-405 Access Downtown, NE 8th Street Bridge Roll Fact Sheet

New NE 8th Street overpass bridge

The NE 8th Street interchange reconstruction project will take a big step toward completion on September 19. Crews will jack up the south half of the new overpass and move it on giant rollers to its permanent supports adjacent to the north half of the overpass.

The \$12.8 million dollar NE 8th Street overpass project is currently under budget. It's part of the \$164.5 million Access Downtown project, which includes local street and highway improvements to help move people in, out and through Bellevue faster. Funding is provided by Sound Transit, the City of Bellevue, federal agencies, and WSDOT and other state agencies.

The project is currently ahead of schedule. Six lanes of the overpass will be open to traffic before rush hour on Monday, September 22. All eight lanes will open to traffic in November.

Longer and higher

- 328 feet long (old overpass: 292.5 feet long)
- New bridge is three feet higher than the old overpass.
- The new bridge will be long and high enough to make room for:
 - I-405 on- and off-ramps connecting carpools, vanpools and buses from the high occupancy vehicle lane directly to downtown Bellevue via Sound Transit's soon-to-be built NE 6th Street overpass
 - I-405 expansion to add an extra lane in each direction. This project is not yet planned or funded

Wider

- 121.5 feet (old overpass: 103 feet)
- carries four eastbound lanes and four westbound lanes of traffic (old overpass carried three lanes of traffic in each direction)
- eight feet wide sidewalks (old overpass: six feet wide sidewalks)

Structure

- three bridge piers (old overpass: seven bridge piers)
- eleven girders spanning I-405. Each of these 11 full-length girders was made up of 3 smaller girders
- eleven 96 foot steel sections weighing 51,000 lbs each
- twenty-two 114.5 foot steel sections weighing 40,800 lbs each
- over 15,000 7/8-inch high strength bolts were used to assemble this bridge
- 13,000 metric tons of asphalt concrete will be placed on this project—over 350 truckloads of asphalt concrete; of these, 935 cubic meters of concrete were required to build the new NE 8th bridge deck, approximately 130 concrete trucks of material.
- Two cranes were used to assemble the bridge:
 - 210-ton crane – maximum lifting capacity 420,000 lbs
 - 240-ton crane – maximum lifting capacity 480,000 lbs
- These cranes are so large and heavy that had to be brought to the job-site in pieces on separate trucks carrying the various crane components and they are assembled on-site.

Rolling the bridge

Thanks to the rolling bridge, the I-405 NE 8th Street overpass was kept open to traffic while it was entirely rebuilt. The attached diagram shows how this was achieved.

- The southern half of the bridge will be rolled into place on Friday, September 19 and Saturday, September 20
- The bridge section will roll 64 feet to the north
- The bridge section that will be rolled into place weighs 4.4 million pounds
- 24 high strength Hilman rollers will be installed at the three bridge piers to roll the bridge into place. Each roller has a 150-200 ton load carrying capacity. Each roller weighs over 400 lbs.
- The bridge-rolling operation will take approximately six to eight hours to complete.
- Approximately 12-15 crew members are required to roll the bridge. These include operators, carpenters, laborers, and ironworkers.

Step one

Once eastbound NE 8th is closed to traffic at 8 p.m. Friday, twenty-four hydraulic jacks (total), each with a 150-200 ton capacity, will be placed under the bridge at three piers.

Step two

These jacks will be synchronized to lift the steel girders and concrete bridge deck less than half an inch off of the existing bridge bearings (large, very strong rubber pads).

Step three

A computerized control system with sensors attached to the jacking equipment will help the operator determine the location and movement of the bridge. In addition, manual measurements will be made to verify location and movement of the bridge.

Step four

After the bridge is raised, high-capacity Hilman rollers will be slid into position under each girder and shimmed tight into place.

Step five

High-strength steel rods will lock the bridge into position and prevent unplanned movement while the bridge is being lifted and placed onto the rollers.

Step six

Four pairs of 100-ton synchronized hydraulic jacks will pull the bridge 64 feet to the north along steel tracks.

- Pier 1 (west)—two 100-ton jacks
- Pier 2 (center)—four 100-ton jacks
- Pier 3 (east)—two 100-ton jacks

It will take 65 jack strokes (each stroke measures just over 12 inches) to move the bridge. Each stroke will take approximately 4.5 minutes to complete. The jacks take approximately 1 minute to retract and reset for the next stroke.

At each pier, a single high-strength steel rod will be attached to the jacking platform and the bridge. These rods will be shortened (cut) after every 2 strokes due to space constraints. Each pier will also have a “braking” rod to prevent the bridge from slipping or sliding during the operation.

After the bridge roll is complete

Crews will:

- connect eastbound lanes of NE 8th Street to the newly placed bridge. The overpass will be open to three lanes of traffic before Monday morning rush hour begins.
- construct an 11.34 foot wide section of bridge connecting the new north half to the rolled-into-place south half. When overpass construction is complete in November, all eight lanes will open to traffic.
- construct the NE 6th Street overpass and high occupancy vehicle lane ramps for carpools, vanpools and buses

Traffic control

To assure safety, I-405 will be closed to all traffic at night during the bridge roll. The following equipment and manpower will be used to close the highway safely:

- five Washington State Patrol troopers
- 10-15 traffic control workers
- seven or eight truck mounted impact attenuators
- 650 or more traffic drums
- 42 large traffic barricades
- five to seven portable changeable message signs
- 6-8 sequential arrow boards

It takes approximately 30-60 minutes to close or open the freeway to traffic. 20,000 hours of portable changeable message signs alert drivers to the project closures before they occur and while they're underway throughout overpass construction

Other NE 8th interchange reconstruction project facts

- 3.29 miles of 4" diameter conduit for Qwest will be installed as part of this project.
- 3.48 miles of 6" diameter conduit for Puget Sound Energy will be installed as part of this project.
- 30,000 cubic meters of excavation are required. If all of this material were hauled off the project, roughly 3,750 truckloads would be required.
- 37,000 metric tons of gravel will be delivered in approximately 1000 truck trips
- Two new 36 inch diameter storm sewer lines were jacked and bored under I-405 at depths of 10-15 feet below the roadway surface. Both of these lines were over 300 feet in length and are large enough for a grown man to crawl into for inspection (albeit not very comfortably!).
- Three new storm water treatment ponds are being built as part of this project.

Memorandum

TO: Toll Bridge Program Oversight Committee **DATE:** April 26, 2007

FR: Tony Anziano, Toll Bridge Program Manager

RE: Agenda No. - 5a, 2

Item- Yerba Buena Island
Contract Change Orders

Cost:

- a) Design Enhancements: Contract Change Order 60 for the South-South Detour Contract in an amount not to exceed eight million dollars (\$8,000,000).
- b) West Tie-In Site Preparation Work: Contract Change Order 61-S1 for the South-South Detour Contract in an amount not to exceed ten million dollars (\$10,000,000).

Recommendation:

Approve additional authorization to negotiate Contract Change Order 60 for the South-South Detour Contract in an amount not to exceed eight million dollars (\$8,000,000).

Approve authorization to negotiate Contract Change Order 61-S1 for the South-South Detour Contract in an amount not to exceed ten million dollars (\$10,000,000).

Discussion:

Background

In April 2006, the Toll Bridge Program Oversight Committee (TBPOC) approved negotiation of a Contract Change Order (CCO) for construction of Viaduct bent cap and floor beam design enhancements for the South-South Detour (SSD)

Memorandum

contract in an amount not to exceed four million (\$4,000,000). This was based on a preliminary estimate in advance of final design. Negotiation of this CCO has been ongoing pending finalization of the design enhancements.

In February 2007, the TBPOC approved a strategy for retrofit of the Yerba Buena Island (YBI) Viaduct, construction of the SSD and construction of advanced Yerba Buena Island Transition Structure (YBITS) foundation work that resulted in a cost forecast and interim budget increase for the SSD. The current forecast and budget (interim) for the SSD is three hundred and thirty four million four hundred thousand dollars (\$334,400,000).

Resolution of these outstanding CCOs must be achieved in the near future to ensure that SSD and YBITS work will continue at a rapid pace on Yerba Buena Island.

Analysis

Authorization to negotiate the following CCOs is being requested at this time:

1 – CCO 60 - Design for the bent cap enhancements has proceeded to the point where more precise pricing can be conducted, and the Department now estimates the cost of the bent cap enhancement to be eight million dollars (\$8,000,000). The cost of the floor beam enhancements remains under review but is likely to equal the cost of the bent cap enhancements. These enhancements were added to provide additional seismic safety due to the longer service life required for the SSD (service life being time the structure is in place, not the period of actual use). A diagram of the bent cap enhancements is attached.

2 – CCO 61-S1 - Site preparation, civil work (temporary fences, roadway excavation, temporary K-rail, striping, and drainage), stormwater control plans, traffic controls, structure work (soldier pile and soil nail walls, cast in drilled hole piles and columns), integrated shop drawings, and bridge removal (north overhang and Bent 40A outrigger column). This does not include structure work (construction of the new top deck) or existing viaduct demolition and new deck

Memorandum

roll in. These items will be addressed in two additional change orders in June 2007. The CCO for the preparatory work must be processed now to keep on schedule for the planned Labor Day 2007 bridge closure. The Department is requesting authorization to negotiate in an amount not to exceed ten million dollars (\$10,000,000).

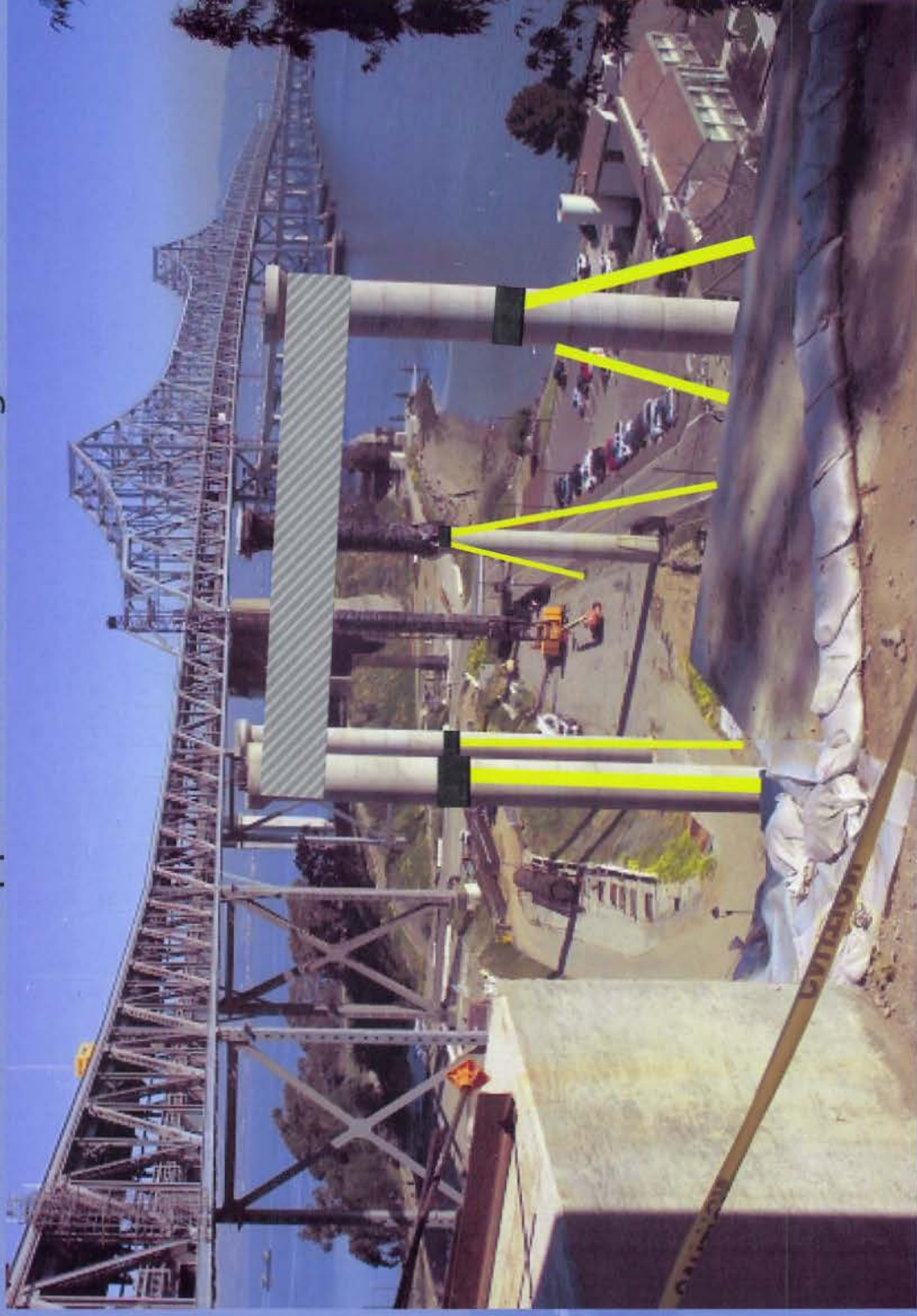
An implementation strategy report is attached that lists all known CCOs necessary for completion of the SSD, YBI Viaduct retrofit and the YBITS advance foundation work. The report is broken down into categories consistent with the elements of work defined for the TBPOC in the February 2007 SSD strategy report. All identified CCOs, including the two CCOs being considered for approval, are within amounts established for CCOs in the current forecast and interim budget.

Attachment(s):

- 1) Diagram of South-South Detour Bent Cap Enhancements
- 2) Contract Change Order Implementation Strategy for South-South Detour Contract

ENHANCEMENTS

Structural Enhancements Support Beam and Bracing



Contract Change Order Implementation Strategy for South-South Detour Contract 04-0120R4 April 25, 2007

South-South Detour (Contract 04-0120R4)			
Contract Award:	March 10th, 2004	Suspensions Days (as of 04/13/07):	572 Working Days
Original Working Days:	475 Working Days	Contract Extensions (as of 04/13/07):	381 Working Days
Original Contract Completion:	July 27th, 2005	Projected Contract Completion:	November 26, 2009
Original Contract Allotment:	\$89,920,000	Projected Contract Cost:	\$296,517,000

Introduction

The strategy for the completion of the South-South Detour (SSD) Project is addressed in the Department memorandum titled “*San Francisco-Oakland Bay Bridge Corridor Schedule Mitigation – Strategy for South-South Detour Contract Completion*” issued December 14, 2006. This memorandum outlines the steps for completing the various portions of the SSD project along with the estimated cost impacts associated with the scope and schedule changes.

Additionally, a Department strategy memorandum titled “*Recommendation to Construct Select Yerba Buena Island Transition Structure Foundations by Contract Change Order*” was issued on December 25, 2006. This memorandum advances the construction of specific foundations and columns of the YBI Transition Structures in order to mitigate risk typically associated with deep foundations and addresses the associated cost estimates.

The purpose of this document is to provide a status of the construction budget, and serves as a check between the CCO expenditures and the approved funding.

Scope of Work for SSD

The scope of work currently associated with the South-South Detour Project is defined as follows:

- (1) SSD New Viaduct
- (2a) West Tie-In Existing Viaduct Phase 1
- (2b) West Tie-In Phase 2
- (3) East Tie-In
- (4) YBI Transition Structures Advance Foundations
- (5) Demolition of the Existing Bridge

Each of these items is addressed separately in the following sections. A key showing the general construction limits can be found in the included attachments from the two above noted strategy memorandums. Also included in the following is a section addressing administrative issues for the overall project.

Contract Change Order Implementation Strategy for South-South Detour Contract April 25, 2007

SSD New Viaduct

1

Progress of Work

Construction of foundations and columns on the SSD bridge has been ongoing since early on in the project. Currently, all viaduct foundations are complete and the Contractor is constructing the remaining columns. Due to the revised strategy and design changes, the new viaduct structure was made to be a stand-alone structure. To accommodate this, bent caps were added between the tops of each pair of columns. In March 2007, the Contractor began erecting the falsework in preparation of retrofitting the columns and constructing the bent caps.

Fabrication of structural steel truss for the viaduct superstructure is currently taking place at Dongkuk S&C in South Korea. This fabrication began in November 2006 with the first deliveries to the project expected to arrive in October 2007. As of April 6, 2007, fabrication is approximately 20% complete.

Status of Contract Change Orders: SSD New Viaduct

CCO	Method of Payment	Description	Plans from Design	CT Estimate Complete	CCM Estimate Complete	TBPOC Approval	Target TBPOC Meeting Date	CCO Executed	Anticipated CCO Cost
49	LS	Stringer and Floor Beam Design Study	N/A	Yes	Yes	ATN April 2006	N/A	5/2/2006	\$109,000
49S1	FA	Truss Design Modifications (Changes to Stringer and Floor Beam Connections)	N/A	Yes	Yes	ATN April 2006	N/A	8/17/2006	\$150,000
49S2	FA		N/A	Yes	Yes			12/18/2006	\$100,000
Subtotal (CCO #49 and Supplements)									\$359,000
50	FA	Stand Alone Viaduct Design	N/A	Yes	Yes	ATN April 2006	ATN April 2006	5/8/2006	\$325,000
50S1	FA			Yes	Yes			10/16/2006	\$300,000
50S2	FA			Yes	Yes			12/18/2006	\$100,000
50S3	FA			Yes	Yes			2/13/2007	\$175,000
Subtotal (CCO #50 and Supplements)									\$900,000
60		Construction of Bent Caps, Joint Seal Assemblies, and Truss Modifications	N/A	Yes	Yes	ATN April 2006	5/1/2007	No	\$8,000,000
67		Viaduct/ETI Interface Modifications	N/A	Yes	No	ATN April 2006	N/A	No	\$268,000
Total CCO Anticipated Cost to Date for SSD New Viaduct									\$9,527,000
Department's Estimate of Total CCO Cost for SSD New Viaduct									\$9,000,000

Bold = CCO's not issued yet
ATN = Authorization to Negotiate

Contract Change Order Implementation Strategy for South-South Detour Contract April 25, 2007

Contract Change Orders #60 and #67 have recently been assigned. CCO #67 addresses modification to the viaduct design to properly interface with the East Tie-In structure. CCO #60 addresses the construction aspects associated with CCO's #49 and #50.

Changes Since Last Report

Since issuing Strategy Memorandum dated December 14th, 2006, the Contractor's schedule for construction of the steel truss viaduct has changed. Due to design changes that affected the fabrication schedule, recent schedule updates show the erection having slipped from the Spring of 2007 to November 2007. Some portion of the fabrication may extend beyond November 2007 as a result of more recent viaduct design changes as a result of the ETI design. At this point, the schedule changes are not controlling and will not impact the scheduled completion of the project.

Budget Status

The Viaduct portion of the Temporary Bypass Structure was bid at \$26.74M. The projected additional costs in the December 14, 2006 Strategy Memorandum were estimated to be \$9M. Currently the total additional costs associated with viaduct enhancements are approximately \$7.3M. This included approximately \$1.26M that has been allocated to Contract Change Orders #49 and #50 and approximately \$6.1M estimated for related construction costs. In April 2006 the TBPOC approved \$1.0M for CCO's #49 and #50 and \$4.0M for the related construction. Finalized costs will be provided once negotiations are complete. The TBPOC also approved authority to negotiate, in the amount of \$ 8.5M, for the relocation of viaduct fabrication from China to South Korea. The CCO associated with this is discussed in Section 6 under Administrative Issues.

West Tie-In Existing Viaduct

Phase 1

2a

Progress of Work

Phase 1 construction in the West Tie-In area began in January 2007 with clearing and grubbing on the south side of the existing bridge. The Contractor is proceeding with excavation and construction of retaining walls for the staging area and the retrofit of existing outrigger column 40A. On the north side of the existing structure, demolition of the existing bridge overhang has been completed and installation of CIDH piles and column for the new West Tie-In Viaduct structure is proceeding. CIDH pile and column installation on the south side will follow this work.

Planning for the 77-hour Labor Day Closure is proceeding. The Department has been working closely with the Contractor and its demolition subcontractor to address contingency plans and ways of ensuring that work proceeds as planned during the closure.

Contract Change Order Implementation Strategy for South-South Detour Contract April 25, 2007

Weekly meetings are being held to address TMP issues and a Media Outreach was held on April 11th, 2007 to kickoff the media awareness campaign.

Status of Contract Change Orders: West Tie-In Existing Viaduct (Phase 1)

CCO	Method of Payment	Description	Plans from Design	CT Estimate Complete	CCM Estimate Complete	TBPOC Approval	Target TBPOC Meeting Date	CCO Executed	Anticipated CCO Cost
57S1		Remove and Clear Building 254	N/A	Yes	Yes	N/A	N/A	No	\$34,406
61	FA	Advance Engineering (Work Plans and Submittals), Site Prep (Ramp Closures, Access Road), Civil Work (Grading), Structure Work (Material Procurement)	Yes	Yes	N/A	N/A	N/A	2/27/2007	\$400,000
61S1	LS/FA	Site Prep, Civil Work (Temporary Fences, Roadway Excavation, Temporary K-rail and Striping, and Drainage), SWPPP, Traffic Controls, Structure Work (Soldier Pile and Soil Nail Walls, CIDH Piles and Columns), Integrated Shop Drawings, and Bridge Removal (North Overhang and Bent 40A Outrigger Column)	Yes	Yes	Yes	Pending	5/1/2007	No	\$10,000,000
TBD	LS	Structure Work (Superstructure), Bridge Removal (Stairway), and Final Electrical/Utilities	Yes	No	No	Pending	6/12/2007	No	
TBD	LS	Bridge Removal (Existing Viaduct), Phase 1 Viaduct Roll-In, Cleanup and Permanent Striping	Yes	No	No	Pending	6/12/2007	No	
Subtotal (CCO #61 and Supplements)									\$10,400,000
66		WTI TMP Planning and Implementation (Includes Temporary Cameras, CMS, etc.)	No	No	No	Pending	6/12/2007	No	
68	FA	Temporary Electrical Work	No	Yes	N/A	N/A	N/A	No	\$140,000
Total CCO Anticipated Cost to Date for West Tie-In Phase 1 and Existing Viaduct Retrofit by Replacement									\$10,574,406
Department's Estimate of Total CCO Cost for West Tie-In Phase 1 and Existing Viaduct Retrofit by Replacement									\$40,000,000

Bold = CCO's not issued yet

Contract Change Order Implementation Strategy for South-South Detour Contract **April 25, 2007**

Costs for the demolition of USCG Building 254 have been agreed to and CCO #57 is being processed. The various supplements for CCO #61 are currently being negotiated with the Contractor. Additional funds are required for the temporary shuttle service to address public access that is impacted by construction of the West Tie-In.

Changes Since Last Report

The demolition of the existing 350' section of bridge and the roll-in of the new superstructure are scheduled to take place during Labor Day Weekend 2007.

Budget Status

The estimated cost of adding the Phase 1 West Tie-In work is \$40M. Estimates are currently being updated as they are finalized and will be included in future updates.

West Tie-In

Phase 2

2b

Progress of Work

All design for the Phase 2 portions of the West Tie-In will be completed by January 2008. Portions of the final design such as foundations and substructure elements will be provided to the Contractor as they become available. Construction of foundations for the Phase 2 West Tie-In is scheduled to begin after the completion of the Phase 1 West Tie-In work after Labor Day Weekend 2007.

Status of Contract Change Orders: West Tie-In (Phase 2)

52	N/A	Designer of Record Issue Resolution	N/A	N/A	N/A	N/A	N/A	3/2/2007	\$0
57		Demolition of Building 206	N/A	Yes	Yes	N/A	N/A	No	\$22,378
62		Construction Changes to Modify Phase 1 WTI	No	No	No	Pending	8/2/2007	No	
		Design Modification to accommodate Phase 1 WTI Plans	No	No	No	Pending	8/2/2007	No	
Total CCO Anticipated Cost to Date for West Tie-In Phase 2									\$22,378
Department's Estimate of Total CCO Cost for West Tie-In Phase 2									\$13,000,000

Bold = CCO's not issued yet

CCO #52 has been executed at no cost to address designer of record issues related to the Department taking back the design of the East and West Tie-In. Cost related to construction is estimated at \$13M and will be addressed in the construction related CCO's for the individual elements. Costs for the demolition of USCG Building 206 have been agreed to and CCO #57 is being issued.

Changes Since Last Report

No changes to report.

Budget Status

The Contractor's bid price for the West Tie-In was \$9.0M. Based on the Department's Strategy Memorandum, the costs associated with the Phase 2 West Tie-In work were estimated to be an additional \$13M to the original contract bid item. As Contract Change Orders for this work are negotiated, the cost summaries will be updated.

East Tie-In

3

Progress of Work

Submittal of the 30% Design is scheduled to be completed by TY Lin in April 2007. A completed design is anticipated by September 2008. Portions of the final design such as foundations and substructure work will be provided to the Contractor as it becomes available with construction of the East Tie-In anticipated to begin in July 2007. Prior to the ETI work starting, a pump station owned by the City of San Francisco will be relocated. The relocation is scheduled to occur by July/August 2007 at a cost of approximately \$1M. The Contractor has been directed to procure specialized equipment/materials for the relocation of the pump station.

Contract Change Order Implementation Strategy for South-South Detour Contract April 25, 2007

Status of Contract Change Orders: East Tie-In

52	N/A	Designer of Record Issue Resolution	N/A	N/A	N/A	N/A	N/A	3/2/2007	\$0
63		Work Plans and Submittals	No	No	No	N/A	N/A	No	
63S1		Site Prep and Civil Work	No	No	No	Pending	8/2/2007	No	
63S2		Structure Work (Skid Bent Foundations and Substructure)	No	No	No	Pending	10/30/2007	No	
63S3		Structure Work (ETI Superstructure), Bridge Removal, Utility Relocation/Removal	No	No	No	Pending	TBD	No	
Subtotal (CCO #63 and Supplements)									
69		Relocation of Pump Station	No	No	No	Pending	6/12/2007	No	\$1,000,000
		ETI TMP Planning and Implementation	N/A	No	No	N/A	N/A	No	
		Utilities: Fiber Optic Line Along Shore	No	No	No	N/A	N/A	No	
Total CCO Anticipated Cost to Date for East Tie-In									\$1,000,000
Department's Estimate of Total CCO Cost for East Tie-In									\$34,000,000

Bold = CCO's not issued yet

CCO #52 has been executed at no cost to address designer of record issues related to the Department taking back the design of the East and West Tie-In. The Contractor fulfilled its obligation to design the ETI. As such, the original contract allotment for this bid item will be paid and any credit to the Department will be negotiated. The changes related to construction will be addressed in the construction related CCO's for the individual elements.

Changes Since Last Report

The Roll-Out/Roll-In at the East Tie-In is scheduled for the second quarter of 2009. This has been changed from Labor Day 2008 due to requirements of the overall corridor schedule.

Budget Status

The work item for East Tie-In originally bid by the Contractor was \$6.0M. Additionally, another \$1.46M was bid by the Contractor for the demolition of the existing span moved out for the East Tie-In. The Department estimates additional costs associated with the construction of the East Tie-In to be \$34M. As the work progresses and related Contract Change Orders are negotiated, estimate will be updated.

Contract Change Order Implementation Strategy for South-South Detour Contract April 25, 2007

Yerba Buena Island Transition Structures Advance Foundations

4

Progress of Work

The current YBITS foundation and column locations being advanced are W3R/L, W4R/L, W5R/L, W6R/L, and the W7 Ramp. Construction at Bent W3L was completed March 15th 2007 on CCO #64. This work consisted of constructing the footing (including tie-downs) and the column up to the splice zone. This work was accomplished on an accelerated schedule to accommodate the SAS Contractor's schedule for W2 Bent Cap construction. It is anticipated that the SSD Contractor will be able to resume work in this area and proceed with the construction of Bent W3R in January 2008. Work on Integrated Shop Drawings is currently underway. Construction of Bent W4L is scheduled to begin by May 2007.

Status of Contract Change Orders: YBI Transition Structures Advance Foundations

1S1	FA	Flagging	N/A	Yes	N/A	N/A	N/A	2/9/2007	\$200,000
64	FA	YBITS W3L Site Prep and Grading and Construct	Yes	Yes	N/A	N/A	N/A	1/8/2007	\$150,000
64S1	LS/FA	YBITS W3L Foundation and Column to Splice Zone, Integrated Shop Drawings for W3L, Concrete Washouts, 50% of Flagging, and Traffic Controls	Yes	Yes	Yes	Yes	Taken February 2007	4/4/2007	\$5,835,000
TBD	LS	YBITS W3R, W4R/L, W5R/L, W6R/L and W7 Ramp Foundations and Columns	Yes	Yes	No	Pending	6/12/2007	No	
TBD	LS	YBITS W7R/L Foundations and Columns	No	No	No	Pending	6/12/2007	No	
Subtotal (CCO #64 and Supplements)									\$5,985,000
70	FA	Integrated Shop Drawings for Remaining YBITS Advance Locations (W3R, W4L/R, W5L/R, W6L/R, W7L/R, and W7 Ramp)	Yes	Yes	Yes	N/A	N/A	No	\$500,000
Total CCO Anticipated Cost to Date for YBI Transition Structures Advance Foundations									\$6,685,000
Department's Estimate of Total CCO Cost for YBI Transition Structures Advance Foundations									\$107,000,000

Bold = CCO's not issued yet

The Department has estimated the cost of the YBITS Advance Foundations to be \$107M. The Department is currently waiting for a cost proposal from the Contractor for CCO #64S3. Final plans for CCO #64S4 have not been received from Design and thus have not been forwarded to the Contractor.

Contract Change Order Implementation Strategy for South-South Detour Contract April 25, 2007

Changes Since Last Report

The expense of creating Integrated Working Drawings was not originally addressed in the Strategy Memorandum. However, this work is necessary in order to ensure compatibility with work to be performed on future contracts.

Budget Status

The construction of the YBITS Advance Foundations and Columns was estimated to cost \$107M. The TBPOC gave approval to negotiate a CCO for work at Bent W3L up to an amount not to exceed \$7M. Contract Change Orders #64 and #64S1 have been issued for a total of \$5.985M. Additionally, \$200K has been allocated to CCO #1 to account for additional flagging costs that will be incurred due to the YBITS Advance work. The Department's estimate for the YBITS Advance work is \$107M.

Demolition of Existing Bridge

5

Progress of Work

This work will proceed once traffic is switched to the SSD Temporary Bypass Structure. The traffic switch is currently anticipated to occur during Memorial Day Weekend 2009.

Status of Contract Change Orders: Demolition of Existing Bridge

65	Bridge Removal	No	No	No	Pending	TBD	No	\$3,500,000
Total CCO Anticipated Cost to Date for Demolition of Existing Bridge								\$3,500,000
Department's Estimate of Total CCO Cost for Demolition of Existing Bridge								\$3,500,000

Bold = CCO's not issued yet

Removal of the existing bridge is included in the current contract. However, the Department anticipates additional costs resulting from impacts of the YBITS Advance work and associated costs due to escalation. CCO #65 has not been issued.

Changes Since Last Report

No changes to report.

Budget Status

The Contractor's bid price for demolition of the main bridge structure is \$3.5M. The added costs associated with demolition of the existing structure were forecast to be another \$3.5M. As the work progresses and the related Contract Change Order is negotiated, this estimate will be updated.

Administrative Issues

6

Progress of Work

Administrative issues that remain on the SSD contract are related to setting project milestones and determining time related overhead resulting from the contract time extensions, escalation costs, and other necessary changes to the contract. Additionally, costs for implementing COZEEP for the East and West Tie-Ins need to be accounted for.

The following list of milestones has been provided to the Contractor to incorporate into the project schedule:

	Date	Status	Notes
W3L Complete	March 15th, 2007	Complete	finished 3/15/07
West Tie-In Phase 1 Viaduct Demo/Roll-In Complete	September 4th, 2007		
Access to W3R Available to CCM	January 2nd, 2008		
W3R, W4L/R, W6L/R, and W7L/R/Ramp Complete	December 31st, 2008		
Upper East Tie-In Area Available to CCM	April 2nd, 2009		
East Tie-In Roll-Out/Roll-In Complete	May 26th, 2009		
Frame 1 YBITS Area (Bent 7 West) Vacated by CCM	September 1st, 2009		
Project Completion	November 26th, 2009		

The Department has established a new completion date of November 26, 2009 and is negotiating for an equitable revised Time Related Overhead rate. Costs related to escalation and NOPC issues are also being negotiated with the Contractor. NOPC's with significant exposures include issues on the East Tie-In Design Criteria (NOPC #3, \$4.3M), Viaduct Segment Bearings Changes (NOPC #8, \$658K), and Design Submittal Review (NOPC #16, \$2.1M).

Contract Change Order Implementation Strategy for South-South Detour Contract April 25, 2007

Status of Contract Change Orders: Administrative Issues

24S3		Determine Contract Completion Date and Set Contract Milestones	N/A	No	No	Pending	6/12/2007	No	
24S4		Time Related Overhead	N/A	No	No	Pending	6/12/2007	No	
55		Steel Fabrication Changes (SGT Closeout)	N/A	No	Yes	ATP April 2006	6/12/2007	No	\$10,500,000
56		Escalation Issues	N/A	No	No	Pending	6/12/2007	No	
56		NOPC Closeout	N/A	No	No	Pending	6/12/2007	No	
		Add Cozeep for WTI	N/A	No	No	N/A	N/A	N/A	
		Add COZEEP for ETI	N/A	No	No	N/A	N/A	N/A	
Total CCO Anticipated Cost to Date for Administrative Issues									\$10,500,000
Department's Estimate of Total CCO Cost for Administrative Issues									\$27,500,000

Bold = CCO's not issued yet

The original contract allotment provided \$1.3M for COZEEP. However, with two full bridge closures planned additional funds will be required. The added COZEEP will not result in a Contract Change Order and is shown here to capture costs to the project. Additionally, costs for changing steel fabricators (CCO #55) have been estimated to be \$10.5. This issue is under negotiation with the Contractor and estimates are being finalized.

Changes Since Last Report

The Department has set a project completion milestone date of November 26, 2009. The December 14, 2006 Strategy memorandum projected the contract to be extended to 2010.

Budget Status

Costs of \$48.5M (\$148M total additional cost minus the cost of individual scope items) have been estimated for additional Time Related Overhead, escalation issues, and undefined risk items. As Contract Change Orders for these items are negotiated, the original \$48.5M estimate will be updated. TBPOC has previously approved \$8.5M for the closeout costs associated with the change of steel fabricators. The estimated \$10.5M in closeout cost are based on the amount requested by the Contractor and are still being negotiated. Finalized costs will be provided here once they are available. These added entitlement costs will be paid from previously approved supplemental funds. Costs related to settlement of NOPC issues will be paid out of the contract contingency.

BUDGET SUMMARY

Status of Changes on SSD Contract (April 2007):

	Scope of Work	Department's Estimate (\$M)	CCO's To Date
(1)	SSD New Viaduct	\$9.0	\$9.5
(2a)	West Tie-In Existing Viaduct Phase 1	\$40.0	\$10.6
(2b)	West Tie-In Phase 2	\$13.0	\$0.0
(3)	East Tie-In	\$34.0	\$1.0
(4)	YBI Transition Structures Advance Foundations	\$107.0	\$6.7
(5)	Demolition of Existing Bridge	\$3.5	\$3.5
(6)	Administrative Issues	\$27.5	\$10.5
	Total	\$234.0	\$41.8

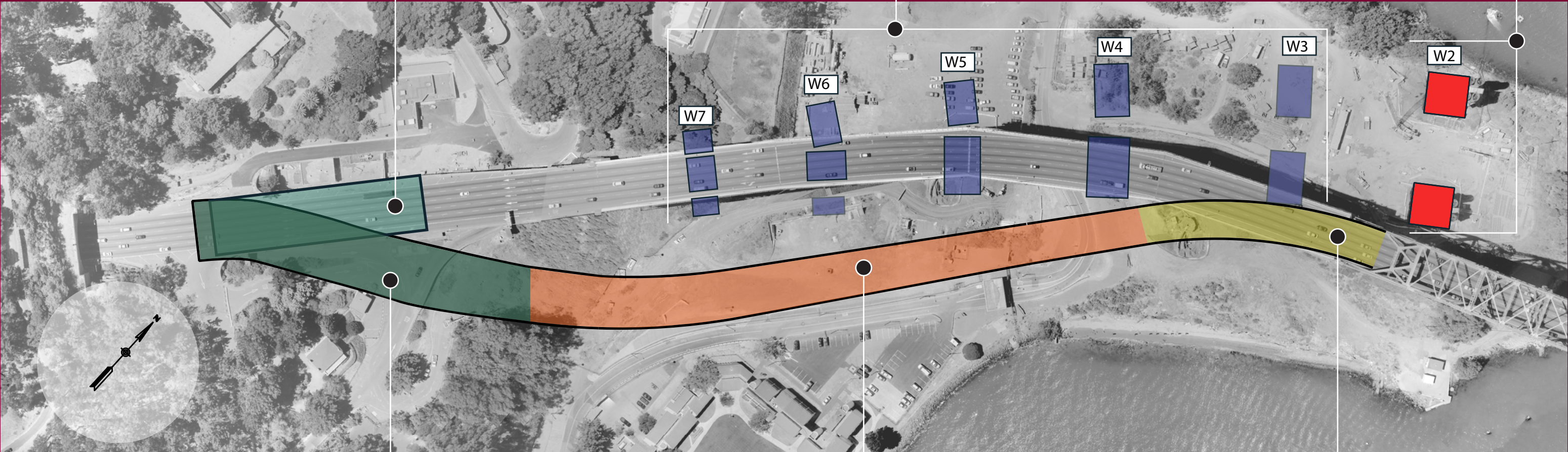
West Tie-In (Phase 1)
Existing Viaduct

2a

Yerba Buena Island
Transition Structure
Advanced Foundation Work

4

Land-Based Foundations



West Tie-In (Phase 2)

2b

SSD Viaduct

1

East Tie-In

3

TO: Toll Bridge Program Oversight Committee (TBPOC) **DATE:** April 25, 2007

FR: Stephen Maller, Deputy Director, CTC

RE: Agenda No. - 5b, 1

ITEM: Self-Anchored Suspension Superstructure
Overseas Site Visit

Cost Status:

N/A

Schedule Status:

N/A

Recommendation:

Information Only

Discussion:

Over the week of April 8th, PMT members Tony Anziano and Stephen Maller visited the ZPMC fabrication facilities on Changxing Island in Shanghai, China

The ZPMC Changxing Island facility is extremely large. Mr. Wu, ZPMC's SAS Project Manager indicated that currently 40,000 workers are employed on the island and one port container crane (ZPMC's core business) is produced every other day. Total fabrication time for each container crane is about eight months.

The SAS bridge deck sections will be produced in existing ZPMC fabrication workshops. SAS tower sections will be produced in two new heavy-duty workshops currently under construction. Each heavy-duty workshop will have four 400t overhead cranes. Per ZPMC's schedule the heavy-duty workshop construction will finish by July 15, 2007. The heavy-duty workshop construction started January 2, 2007 with pile driving and currently the building's steel superstructure installation is nearing completion.

In addition, ZPMC will construct a 20,000t heavy-duty dock to facilitate transfer of the completed SAS bridge sections from shore to ship. Construction of the heavy-duty dock is to start on April 20, 2007 and is scheduled for completion by October 20, 2007.

ZPMC produced and showed a video animation illustrating workshop layouts, equipment procurement, and the assembly and welding operations that will be performed during the fabrication process for the SAS bridge sections. The video was well done and indicative of how much thought and innovation ZPMC has put into the SAS fabrication process.

Currently, ZPMC is preparing its welders for weld certification testing. One problem facing ZPMC is that per contract specifications, welders in charge of welding operations are required to have three years of post-certification welding experience. Obviously, welders that ZPMC is now certifying will not gain the required three years of certified welding experience until after our SAS project's fabrication is completed.

ZPMC's general managers, during dinner with the PMT members, advocated that ZPMC welders have the requisite three years of bridge welding experience based on the Incheon Bridge deck fabrication that ZPMC is currently performing. The PMT members politely indicated that pre-certification experience is valuable but it is not the same as the three years of post-certification experience that is a world standard for fracture critical bridge welding and called for in the SAS bridge specifications. The ZPMC managers were not happy with the outcome of the dinner conversation, but it looked like they got the point and will start the process to secure the required experience from outside of China if none can be found in China.

Observations:

Based on my observations of the speed with which ZPMC is proceeding and the manpower that ZPMC can throw at the SAS project, it is vitally important that a strong permanent owner presence be maintained in Shanghai during the SAS bridge fabrication process. In addition, the owner presence has to be made up of people with authority to make decisions on the spot in China without the need to seek guidance and permission for action from home. Otherwise, the SAS fabrication process will be subject to constant work slowdowns and even stoppages while answers come filtering down from Oakland and/or Sacramento.

Attachment(s)

None

Memorandum

TO: Toll Bridge Program Oversight Committee (TBPOC) **DATE:** April 25, 2007

FR: Andrew Fremier, Deputy Executive Director, BATA

RE: Agenda No. - 6a
Item- New Benicia-Martinez Bridge
Schedule Revision

Cost Impacts:

None

Schedule Impacts:

See Table 1 – Revised New Benicia-Martinez Bridge Contract Schedules below.

Recommendation:

Approval of Updated New Benicia-Martinez Bridge Project Schedule

Discussion:

The PMT is requesting that the TBPOC adopt revised contract completion dates that reflect the current construction progress. The revised dates will be reported in the April 2007 Monthly Progress Report to be issued in May 2007. The revised dates will be reported as shown below in Table 1.

As discussed at the last TBPOC meeting, the new Benicia-Martinez Bridge is nearly complete, and, based on current project progress, will be ready for traffic by September 2007. This is three months earlier than the currently reported open-to-traffic date in the monthly report of December 2007.

Along with the revised open-to-traffic date, other changes include completing overall construction of the new bridge two months earlier than reported, revising the completion date of the new toll plaza contract, and extending the existing bridge modification contract.

- ◆ On the new bridge contract, Kiewit will likely achieve the early completion incentive of \$5 million dollars.

- ◆ On the new toll plaza contract, the contract completion date of the project is being moved to May 2007 to match the plant establishment completion date of the contract.
- ◆ On the existing bridge modification, the revised contract completion date of the project is being extended by 6 months for construction risk management. However, this date can be brought back in if HQ OE plan review of the contract can be accelerated, if the contract is advertised earlier, and if the A+B bid results in a shorter construction duration.

Table 1 – Revised New Benicia-Martinez Bridge Contract Schedules

Contract/Other	Current Approved Completion Schedule (April 2007)	Forecast Completion Schedule (April 2007)	Revised Approved Current and Forecast Schedule (May 2007)
Open-To-Traffic Date	December 2007	December 2007	September 2007
New Benicia-Martinez Bridge (04-006034)	December 2007	December 2007	October 2007
I-680/I-780 Interchange (04-006064)	December 2007	February 2008	December 2007
Marina Vista Interchange (04-006054)	April 2006	April 2006	April 2006
New Toll Plaza (04-006044)	June 2006	May 2007	May 2007
Modify Existing Bridge (04-0060A4)	December 2009	December 2009	June 2010

Attachment(s)

None

Item 7: Other Business

No Attachments